

MARCH, 1948

CHEMICAL PROCESSING

PREVIEW
The Magazine of
PROCESSING, ITS CONTROL AND DEVELOPMENT

In this issue

216 Articles

NEW SOLUTIONS OF PLANT PROBLEMS . . . 6 actual "installation-type" articles of "how it was done better".

MATERIALS . . . 20 reports on developments in materials that make for better processing.

MATERIAL HANDLING . . . 13 examples of improved ways to handle materials in process.

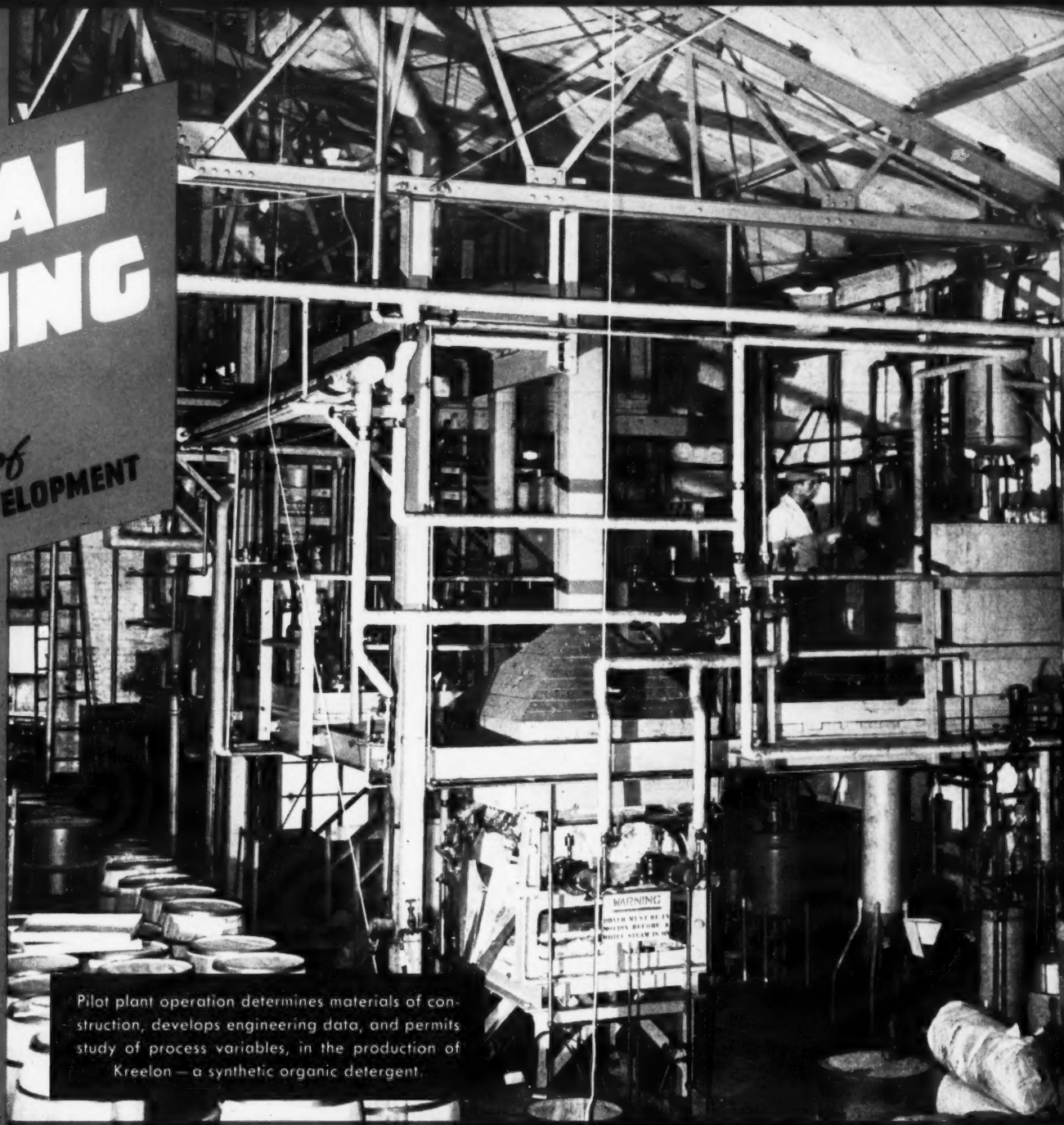
PROCESS INSTRUMENTATION . . . 16 reports on better process control through instruments.

IDEAS . . . 8 ideas gleaned from this or other industries that offer possibilities in chemical processing.

BRIEFS . . . 12 "quick looks" at interesting articles in contemporary publications.

NEW LITERATURE . . . 65 reviews of current literature describing process equipment and materials.

PROCESSING EQUIPMENT . . . 76 articles on developments in equipment to aid processing operations.



Pilot plant operation determines materials of construction, develops engineering data, and permits study of process variables, in the production of Kreelon — a synthetic organic detergent.

from chemicals to petroleum refining . . . here's

**The only magazine devoted exclusively to helping you men
who are responsible for chemical processing**

Are you busy? Are you controlling processing operations? Then this magazine is "tailor made" for you. For everything in it is of interest to you in your work.

No . . . there's no "News of Washington", no "Foreign Affairs", no politics, no sales talk or other matters not pertinent to your job.

In this issue are 216 articles . . . every one about chemical processing or its control. Every one with an idea in it. Better ways of handling

tough processing operations . . . modern, new developments in products, equipment, etc.

And it's B-R-I-E-F, to-the-point. No long articles . . . "long-windedness" is edited out . . . so a busy man can get ideas without wasting time. And when you want more information on these ideas, you'll find it's made easy for you to get it.

This is your magazine. Its sole purpose is to serve you.

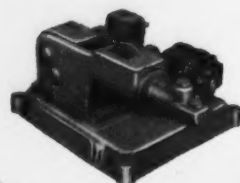
CHEMICAL PROPORTIONING PUMPS

for Every Process Plant

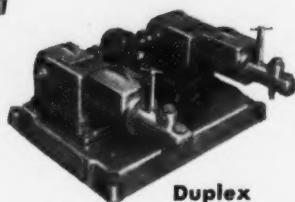
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FOR HIGH PRESSURES**

**DIAPHRAGM TYPE PUMPS
FOR LOW PRESSURES**

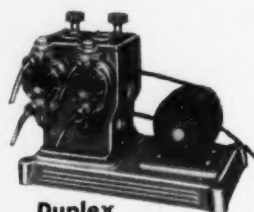
FROM PILOT PLANTS



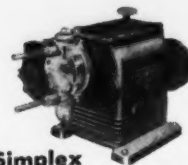
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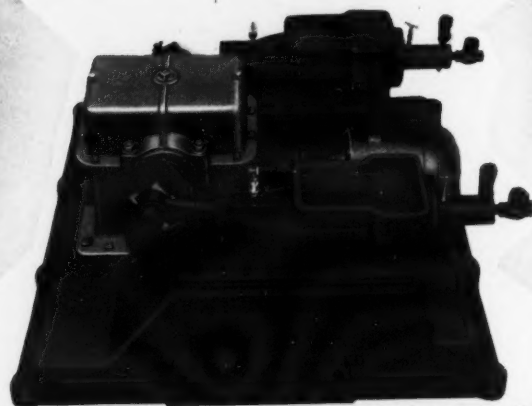


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"That's Interesting"

Invert Sugar Helps Speed Processing GR-S at Zero

Most synthetic rubber of the GR-S type has been made at about 125 degrees F. Liquid ingredients are maintained at this temperature in cookers during a 12 hour period while the synthetic latex is produced. Tests at U. S. Rubber Co. pilot plant have shown that as the temperature in the rubber kettles is reduced, the rubber produced becomes more like natural rubber. The company is equipping part of its plant at Borger, Texas, to produce GR-S at any temperature down to zero. Kettles to operate at zero are being sheathed in an 8-inch layer of cork. Ingredients of these kettles will include anti-freeze to keep the water in the recipe from freezing.

Four speed-up chemicals shorten the former 10 day processing time to the 12 hours in which the chemical combination of butadiene and styrene into GR-S is now performed. Temperature under the 10 day period was 35 degrees. Had it been zero the time required would have been even longer.

The four chemical agents are cumene hydroperoxide, an oxidizing agent, invert sugar, a reducing agent, sodium pyrophosphate and ferrous sulfate, activating agents. (United States Rubber Co., New York)

Carbon Cups Form Hearths of Blast Furnaces

Big cups of hard-baked carbon, each weighing 579,000 pounds, form the hearths of two new blast furnaces which Carnegie-Illinois Steel Corporation is building at South Chicago and of another at Gary, Ind. The carbon hearth, now extensively used in U. S. Steel subsidiaries was specified because carbon is not adversely affected by temperatures ranging from 2700 to 3000 degrees F. The carbon blocks provide greater protection against explosion and other hazards and increase the quantity of iron that can be obtained from a furnace without interruption for repairs.

Bauxite at Babelthup

Preliminary reports place potential or inferred reserves of Bauxite on Babelthup in the Palau group at 50,000,000 tons. The deposits represent the product of the laterization of volcanic rocks, chiefly andesite. Under the Japanese, to whom these islands were once mandated, mining operations were very extensive. (Raw Materials Survey, Portland 5, Oregon.)

(Continued on third cover)

For more information on product at left, specify CP 4223 . . . see information request blank between pages 2-3.

For More Information

about products described in this issue check this sheet

Every product described in this issue is listed on this Sheet — Check items that interest you, fill in your name and address on the reverse side of this Sheet and mail to publisher. Information comes direct to you, without obligation.

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<input type="checkbox"/> 4224 Chemicals (Specify Data Desired)	<input type="checkbox"/> 4284 Electric Truck	<input type="checkbox"/> 4348 Microburet	<input type="checkbox"/> 4406 "Volumetric Analysis" (Book)
<input type="checkbox"/> 4225 Mixers	<input type="checkbox"/> 4285 Impact Cushioning Idlers	<input type="checkbox"/> 4349 Instruments Catalog 1811	<input type="checkbox"/> 4407 Resin 510 Technical Booklet
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<input type="checkbox"/> 4226b Silica Free Water Data	<input type="checkbox"/> 4287 Magnetic Separator (Chutes)	<input type="checkbox"/> 4351 Electric Tachometer	<input type="checkbox"/> 4409 Continuous Extrusion Accessories
<input type="checkbox"/> 4227 Moisture Recorder	<input type="checkbox"/> 4288 High-Lift Fork Truck	<input type="checkbox"/> 4352 Electric Level Controls	<input type="checkbox"/> 4410 Propellers
<input type="checkbox"/> 4228 Micromet	<input type="checkbox"/> 4289 Material Handling (Specify Data Desired)	<input type="checkbox"/> 4353 Gyrator Sifter	<input type="checkbox"/> 4411 Oil-Metering Valve (Bul. 707)
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<input type="checkbox"/> 4235 Neoprene Vibration Absorbers	<input type="checkbox"/> 4296 Barrel Lifter	<input type="checkbox"/> 4361 Nullmatic Pressure Regulator	<input type="checkbox"/> 4419 "SK" Switches (Data sheet 41)
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<input type="checkbox"/> 4237 Exhaust Fans	<input type="checkbox"/> 4298 Midget Hoist	<input type="checkbox"/> 4363 Flange Fittings (902)	<input type="checkbox"/> 4421 Reinforcing Furnace Blacks (Tech. Service Report R-5)
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<input type="checkbox"/> 4253 Vinylite Resins	<input type="checkbox"/> 4314 Lift Truck Catalog	<input type="checkbox"/> 4379 Steam Purifier Publication 272c	<input type="checkbox"/> 4437 Industrial Gloves
<input type="checkbox"/> 4254 Arwaxes Data Sheet	<input type="checkbox"/> 4315a Acculute Ampoules	<input type="checkbox"/> 4380 "Chemicals by Glyco" Manual	<input type="checkbox"/> 4438 Stop Valves
<input type="checkbox"/> 4255 Vinyl-Clad Coating	<input type="checkbox"/> 4315b pH Test Papers	<input type="checkbox"/> 4381 "The Metal Tantalum" (F-635)	<input type="checkbox"/> 4439 Organic Glucosates
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<input type="checkbox"/> 4258 Resyn Adhesives	<input type="checkbox"/> 4318 Vapor Detector	<input type="checkbox"/> 4384 Steam Jet Ejectors (Cat. 1462)	<input type="checkbox"/> 4441b Bevel Gear Chucks (Form 1183)
<input type="checkbox"/> 4259 Microcrystalline Wax	<input type="checkbox"/> 4319 Wet Film Thickness Gauge	<input type="checkbox"/> 4385 Steam-Heating Coils (B-1316)	<input type="checkbox"/> 4442 Material Handling Catalog 23
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<input type="checkbox"/> 4261 Plastic Lined Pipe	<input type="checkbox"/> 4321 Fuel-Air Ratio Controller	<input type="checkbox"/> 4387 Kodagraph Autopositive Paper	<input type="checkbox"/> 4443b Mixing Equipment
<input type="checkbox"/> 4262 Hevimet Alloy	<input type="checkbox"/> 4322 Carbon Determinator	<input type="checkbox"/> 4388 Alloy Steels Stock Booklet	<input type="checkbox"/> 4443c Agitators
<input type="checkbox"/> 4263 Chlorinated Paraffin Booklet	<input type="checkbox"/> 4323 Pyrometer Accessories	<input type="checkbox"/> 4389 V-Belt Drives	<input type="checkbox"/> 4444 FM Nylon Filter Cloth
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<input type="checkbox"/> 4272 New Type GR-S Rubbers	<input type="checkbox"/> 4332 Laboratory Oven (475-D)	<input type="checkbox"/> 4397 Alloys Bulletin 100	<input type="checkbox"/> 4453 Welding Cable Leaks (CC-47)
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<input type="checkbox"/> 4274 Protective Coatings Catalog	<input type="checkbox"/> 4334 pH Meter Bul. 910 I	<input type="checkbox"/> 4399 Fybroil 115 (Tech. Bulletin)	<input type="checkbox"/> 4455 Polyethylene Glycols (Form 4772)
<input type="checkbox"/> 4275 Kreslon	<input type="checkbox"/> 4335 Dial Thermometer	<input type="checkbox"/> 4400 High Pressure Pump (Bul. 244)	
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MARCH, 1946

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<input type="checkbox"/>	4458 Non-clog Cord Filter	<input type="checkbox"/>	4509 Steam Generators	<input type="checkbox"/>	4561 Mixers Catalog 52	<input type="checkbox"/>	4615b Machine-Type Electrode Holder
<input type="checkbox"/>	4459 Testing Machine (Baldwin-Tate-Emery; New-Type)	<input type="checkbox"/>	4510 Vertical Mixer	<input type="checkbox"/>	4562 Oil Reclaimer (R-160)	<input type="checkbox"/>	4616 Pressure Filters
<input type="checkbox"/>	4460 Laboratory Oil Bath Pots	<input type="checkbox"/>	4511 Oil-Chem Aprons & Clothing	<input type="checkbox"/>	4563 Wire Terminal Foot-Press	<input type="checkbox"/>	4617 Diaphragm Regulating Valves
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<input type="checkbox"/>	4462 Scales	<input type="checkbox"/>	4513 Storage Bins	<input type="checkbox"/>	4565 Wire Belt	<input type="checkbox"/>	4619 Airline Heater (Bul. CS-25)
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<input type="checkbox"/>	4468 Control Valve with Spline Plug	<input type="checkbox"/>	4518b Corrosion Resistant Metal Tables	<input type="checkbox"/>	4571 Flexible Shaft Tool Kit	<input type="checkbox"/>	4625 Hydraulic Packing Press
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<input type="checkbox"/>	4470 Pipe Cutters	<input type="checkbox"/>	4520 Acid Applicator-Brush	<input type="checkbox"/>	4573 Perforated Metals	<input type="checkbox"/>	4626b DC Motors (C218)
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<input type="checkbox"/>	4472 Alconox Soapless Cleaner	<input type="checkbox"/>	4522 Dorrco Water Treatment	<input type="checkbox"/>	4575 Concrete Drill Bits	<input type="checkbox"/>	4628 Frames & Clamps (Bul. UC-95)
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<input type="checkbox"/>	4477 "Eye Saver" Goggles, No. 30	<input type="checkbox"/>	4527 Carbon Raschig Rings	<input type="checkbox"/>	4580 Roller Chain Catalog 617	<input type="checkbox"/>	4633 Plastic Linings & Chemical Stoneware
<input type="checkbox"/>	4478 Cone Drive Stirring Motor	<input type="checkbox"/>	4528 Air Separator	<input type="checkbox"/>	4581 Dial Thermometer	<input type="checkbox"/>	4634 Tube Cleaner (Model CC-375)
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<input type="checkbox"/>	4480 Angle-Type Strainer	<input type="checkbox"/>	4530 "Letheray" Germicidal Lamp	<input type="checkbox"/>	4583 Strapping Reels Cat. 11	<input type="checkbox"/>	4636 Equipment Fabrication
<input type="checkbox"/>	4481 Spray Dryers	<input type="checkbox"/>	4531 Metal Gaskets	<input type="checkbox"/>	4584 Carboy Boxes	<input type="checkbox"/>	4637 Processing Equipment (Specify Data Desired)
<input type="checkbox"/>	4482 Magnetic Separators	<input type="checkbox"/>	4532 Pressure Reducing Valves	<input type="checkbox"/>	4585 Fused-Quartz Heater	<input type="checkbox"/>	4638 Motors
<input type="checkbox"/>	4483 Hydraulic Pump (Bul. 1-P)	<input type="checkbox"/>	4533 Fractional hp Motors (Type CSI)	<input type="checkbox"/>	4586 Trap Bulletin 544	<input type="checkbox"/>	4639 Condenser Bulletin 103
<input type="checkbox"/>	4484 Loopohm Resistors	<input type="checkbox"/>	4534 Canvas Gloves (Super Canton)	<input type="checkbox"/>	4587 Portable AC Welders	<input type="checkbox"/>	4640 Dryers (Specify Data Desired)
<input type="checkbox"/>	4485a Vacuum Equipment 46C	<input type="checkbox"/>	4535 Rolls	<input type="checkbox"/>	4588 Stainless Steel Tubes	<input type="checkbox"/>	4641 Stainless Steel Pump (Model 340)
<input type="checkbox"/>	4485b Vacuum Gauges 45G	<input type="checkbox"/>	4536 Kettle Bulletins	<input type="checkbox"/>	4589 Pulp Press	<input type="checkbox"/>	4642 Filling Machines
<input type="checkbox"/>	4485c Vacuum Pumps 463	<input type="checkbox"/>	4537 Flexible Coupling	<input type="checkbox"/>	4590 Butterfly Valves	<input type="checkbox"/>	4643 Scales Catalog 2020
<input type="checkbox"/>	4486 Rubber Coated Gloves	<input type="checkbox"/>	4538 Steam Traps	<input type="checkbox"/>	4591 Sturtevant Axiflo Fans	<input type="checkbox"/>	4644 Stainless Fastenings
<input type="checkbox"/>	4487 Radioactive Sample Changer	<input type="checkbox"/>	4539 Chemicals (Specify Data Desired)	<input type="checkbox"/>	4592 Gauges & Valves (Specify Data Desired)	<input type="checkbox"/>	4645 Palm-Size Hose Valve
<input type="checkbox"/>	4488 Dissolver Folder	<input type="checkbox"/>	4540 Alloy Fabrication CP30	<input type="checkbox"/>	4593 Viscometer Booklet	<input type="checkbox"/>	4646 Centralized Lubrication
<input type="checkbox"/>	4489 Solenoid Valves	<input type="checkbox"/>	4541 Laboratory Test Unit	<input type="checkbox"/>	4594 Boring Tools (Form 117A-947-S)	<input type="checkbox"/>	4647 Plant Construction (Specify Data Desired)
<input type="checkbox"/>	4490 Worm Gear Speed Reducers	<input type="checkbox"/>	4542 Condensate Return	<input type="checkbox"/>	4595 Binell Tester (Model KDR)	<input type="checkbox"/>	4648 Precision Balance
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<input type="checkbox"/>	4492 High Voltage Power Supply	<input type="checkbox"/>	4544 Utility Fan (Type AA)	<input type="checkbox"/>	4596b Vacuum Pumps	<input type="checkbox"/>	4649b "Welding Refinery Equipment"
<input type="checkbox"/>	4493 Expansion Valve	<input type="checkbox"/>	4545 Bags & Filling Machines	<input type="checkbox"/>	4597 Porcelain Fittings (C-2)	<input type="checkbox"/>	4650 Cooling Radiators (Mono-Weld)
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<input type="checkbox"/>	4495 Safety Relief Valve	<input type="checkbox"/>	4547 Shuntflow Meter Bulletin 349	<input type="checkbox"/>	4599 Dryers (Bul. 16-2)	<input type="checkbox"/>	4652 Brass Globe Valves
<input type="checkbox"/>	4496 Dopp Kettles	<input type="checkbox"/>	4548 Multi-Form Graders	<input type="checkbox"/>	4600 Hydro-Clone "R"	<input type="checkbox"/>	4653 Chemical Stoneware
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HIGHLIGHTS IN THIS ISSUE

These articles have been selected by the Editors as having unusual interest

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* **Water Treatment System** . . . Phosphate glass treatment prevents blocking of plant piping by slime and other organic growths . . . 6

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Cover Picture Story

The pilot plant pictured on the cover was used in developing the most efficient method for producing a sodium alkylarylsulfonate type of synthetic organic detergent — Kreeclon. The feature of this product is its ability to function effectively in acid, alkaline, neutral solutions, water or in various combinations. Article on page 12.

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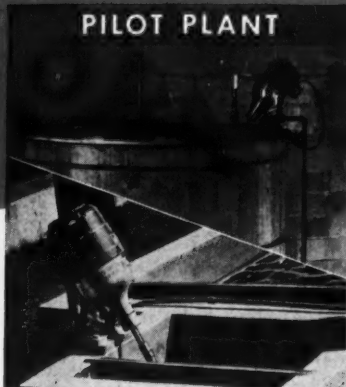
HOW TO GET HELP FROM OUR ENGINEERS TO SOLVE YOUR MIXING PROBLEMS

LABORATORY



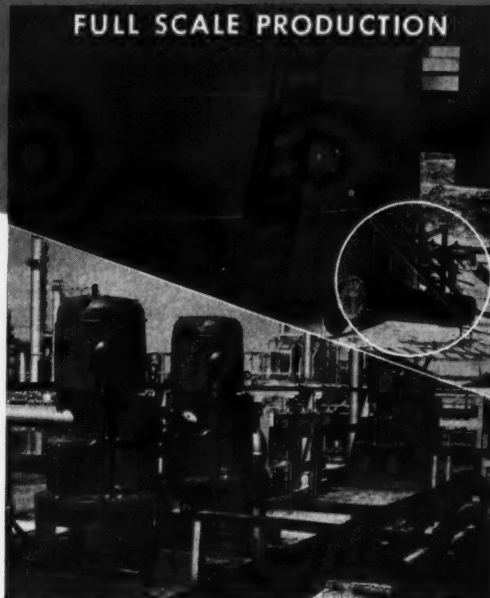
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PILOT PLANT



Lightnin Portable Mixers are used for both continuous and batch operations. The upper illustration shows mixer in a standard 600 gallon wooden tank. Lower installation shows use as a continuous flash mixer for industrial waste disposal.

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Time elements	Power consumption	Temperature and pressure
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Mixing Equipment Company offers its services in the solution of any problem involving controlled recirculation of liquids to produce physical and chemical changes, as included in the following table:

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Simple Mixing of soluble liquids as in reducing concentration.	Washing of Liquids Extraction Contacting Caustic Treating Emulsions	Precipitation Evaporation Systems	Hydrogenation Aeration Gas Scrubbing Chlorination Gas Washing	Slurries Slaking Lime Suspension of: filter aid, activated carbon, Fullers Earth, Crystals while dissolving.	Still Evaporators Reactor Vessels Heating Cooling

1,000 to 5,000,000 gallons

Side Entering Mixers are for use on large tanks, for tanks where tops must be kept clear or where head room is limited. This small gasoline blending tank is equipped with a 5 HP mixer, blending all components in 1 to 2 hrs.

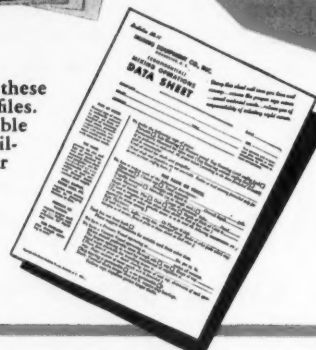
Top Entering Mixers answer requirements for open tanks and for mixing in pressure or vacuum tanks. Above is a Top Entering-Turbine installation showing part of a series of mixers each handling about 10,000 gallons.



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- ☐ Mi-11—Operating Data Sheet

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CHEMICAL PROCESSING PREVIEW

The Magazine of Processing
Its Control and Development

MARCH, 1948
VOL. 11 NO. 3

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... This is a drop of ordinary TAP WATER.
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in your processing and in your finished product. It's cheap
—but it can prove to be costly!



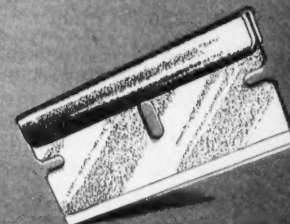
... and this is a drop of DISTILLED WATER.
It has a low solids content—but it's very expensive! As a result, many
manufacturers have felt they could not afford the advantages of
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MOISTURE MEASUREMENT IMPROVES QUALITY OF PAPER SHEET

Instrument uses electrical conductivity of paper sheet as index of measurement of moisture content

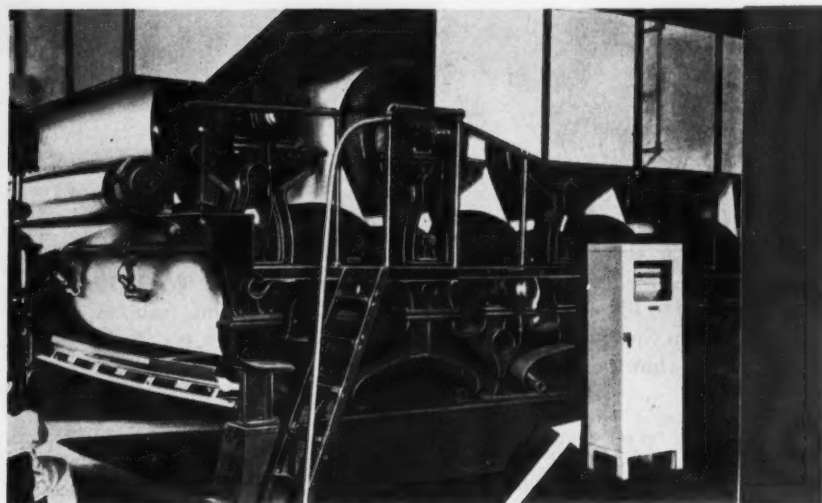


Illustration show application of Moist-O-Graph in a paper mill

PROBLEM — Sheet breakage, "blacks" due to excess moisture, brittleness due to overdrying, faulty finish due to incorrect moisture content when entering the calender stack, and wrinkling and breakage of paper in storage caused by uneven moisture content in different parts of the roll, were factors which were present in a paper making plant.

Furthermore, incorrect moisture control in many cases resulted in overdried paper, and each additional ton of water removed from the sheet meant a corresponding decrease in net profit.

SOLUTION— A moisture recorder employing an electrical conductivity method of measurement was installed. This system is little affected in accuracy by such variables as: changes in machine speed (below 1000 feet per minute), machine ventilation (ambient humidity), mechanical draw, and sheet formation.

Primary measuring element, the detector roll, for a specific installation is determined by such factors as constructional style of dryers and calenders, available space, and point at which it is desired to measure the moisture content of the paper. Accompanying illustration shows possible detector roll locations.

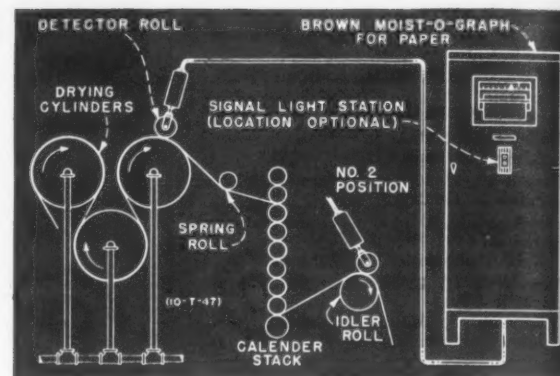
In operation the paper being measured passes between the detector roll and a machine roll or an idler roll that is electrically grounded. Since the electrical resistance of the paper varies in inverse relation to its moisture content, the current flow between the detector roll and the grounded machine or idler roll varies proportionately. The moving web of paper, then, becomes a variable resistance placed in the measuring circuit. Thus the instrument continuously indicates and records the

moisture content of the paper passing beneath the detector roll.

To use the instrument in measuring different types of paper, samples are taken from the moving sheet of paper by mill personnel and a calibration curve established for each type. Electrical circuit is a balanced Wheatstone bridge. A change in the moisture content of the paper web passing beneath the detector roll causes a change in resistance in one leg of the bridge, thus unbalancing the bridge. This small unbalance is then amplified and sent to the instrument, which proceeds to reposition the slide wire contact, thus rebalancing the bridge. Through mechanical action, this rebalancing also positions the pen and indicat-

ing pointer in the instrument. Systems are available for measuring a wide variety of papers for a number of moisture ranges. Measures such papers as: board, book, newsprint, tissue, wrapping, writing and specialties.

RESULTS — Accuracy and speed of response of the



Suggested locations of detector roll for measuring moisture content of paper

instrument allows the machine tender to take corrective action in sufficient time to prevent paper spoilage and sheet breakage. "Blacks," brittleness, faulty finish, wrinkling and breaking in storage, were reduced to a minimum.

SOURCE — Application of this moisture measuring instrument was made by The Brown Instrument Company, Dept. CP, Philadelphia 44, Pa. . . or for more information check CP 4227 on the handy form, pages 2 and 3.

Phosphate Glass Treatment Keeps Water Lines Free From Organic Growth, Slime

Manganese concentration as high as 10 ppm kept in suspension to prevent fouling of chlorinator parts

PROBLEM — Water supply system in the Neville Company plant in Pittsburgh, Pa., failed because of blocking of plant piping by slime and other organic growths. These growths originated in the two wells which supplied this coal tar by-products plant. Shut-downs occurred every two or three days. A chlorinator was installed but manganese content, in the high proportion of 10 parts per million, promptly fouled the chlorinator's working parts so that slime clogging of the plant's water lines continued.

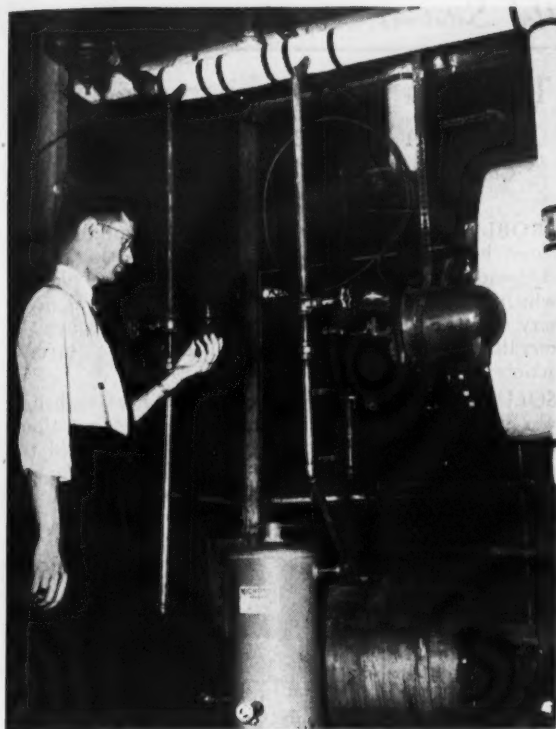
Even one part per million of manganese is acknowledged as sufficient to cause trouble in water systems, so the problem here was particularly stubborn.

SOLUTION — Provision was made for feeding a phos-

phate glass material — Micromet — into the water just before the chlorine was added. A small bleed line from the main well brings raw water through a tank-type Micromet feeder and into the chlorinator. The feeder holds 22 pounds of Micromet.

After the water has thus been Micromet-treated and chlorinated, it is returned to the wells through drop lines that introduce it into the main outflow at the screens on the five-stage pump in the wells.

Micromet is a slowly soluble phosphate glass. It dissolves at a rate of approximately 25 per cent by weight per month, regardless of the quantity originally placed in the feeder through which the water is passed. Effective treatment usually requires introducing five to



Typical installation of 22 lb. capacity water ment, through chlorinator and to main plant outflow

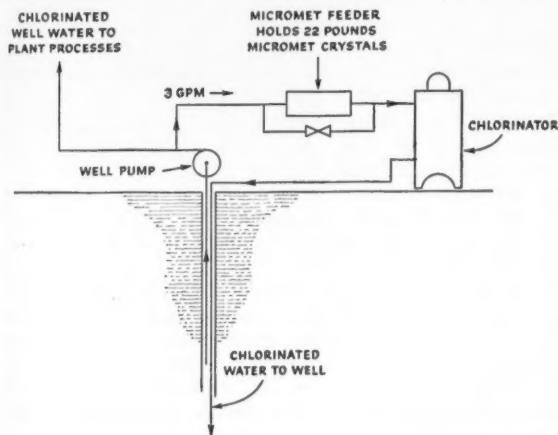
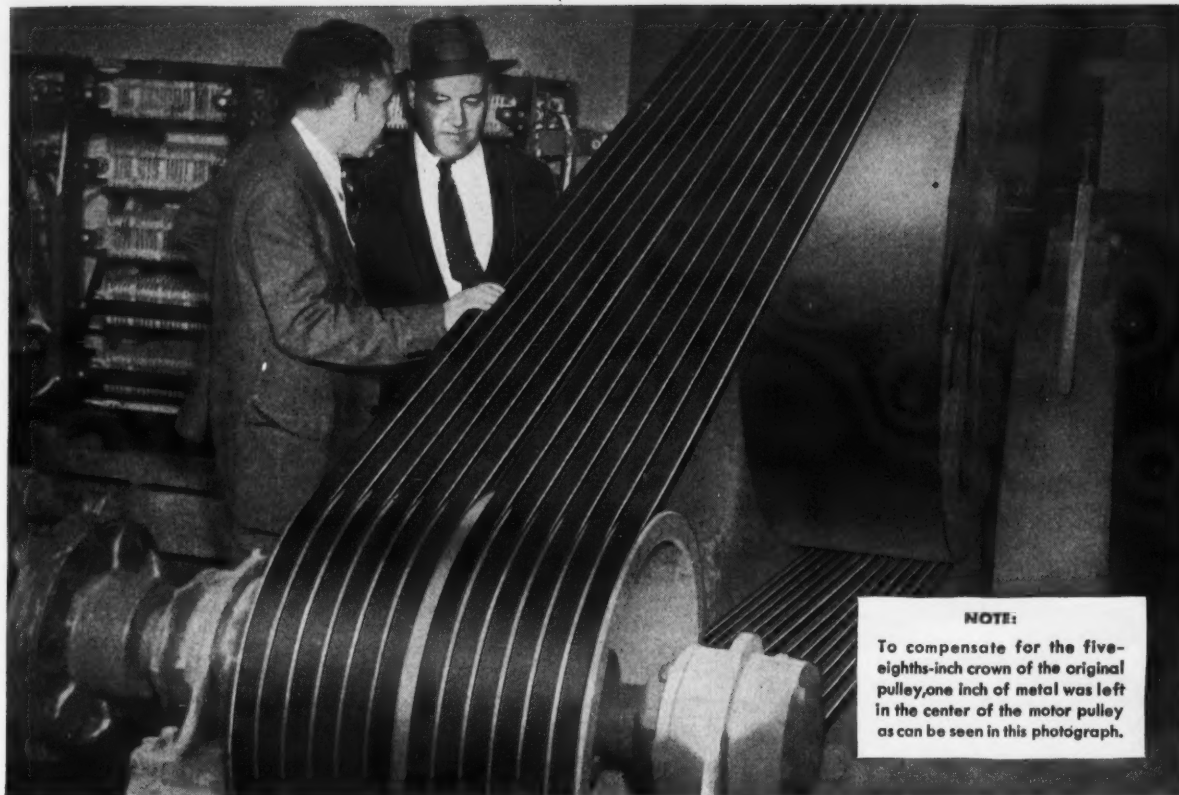


Diagram shows course of water from well to Micromet treatment feeding unit

ten parts Micromet per million parts of water. To maintain the effective strength of the chemical in the feeder, about one-quarter the original charge is added each month.

RESULTS — After six months of service the clogging of pipes is practically eliminated. The chlorinator is now able to do a most effective job. Actual cost of feeder and replacement of chemical is extremely low. Chlorinator manufacturers report that the chemical is equally effective in stabilizing water containing iron, which is more common than high manganese content.

SOURCE — Performance of Micromet treating system reported here from data of Calgon, Inc., Dept. CP, 323 4th Ave., Pittsburgh 30, Pa. . . or for more information check CP 4228 on the handy form, pages 2 and 3.



NOTE:

To compensate for the five-eighths-inch crown of the original pulley, one inch of metal was left in the center of the motor pulley as can be seen in this photograph.

POWER PLANT EXPENSE REDUCED OVER \$3,000 ANNUALLY

Boilers and machinery in the power plant of a large Central Ohio clay products manufacturer were badly in need of repairs. To replace worn-out equipment called for large capital expenditures and even with new equipment, estimated operating expenses loomed large. The manufacturer turned to his local Dayton V-Belt Distributor for suggestions. He recommended replacing the original prime mover with a 250-HP electric motor. This eliminated the necessity of replacing and operating the worn-out boilers. Further, though only 13 feet of floor space were available, the Distributor worked out a Dayton V-Belt short-center drive that

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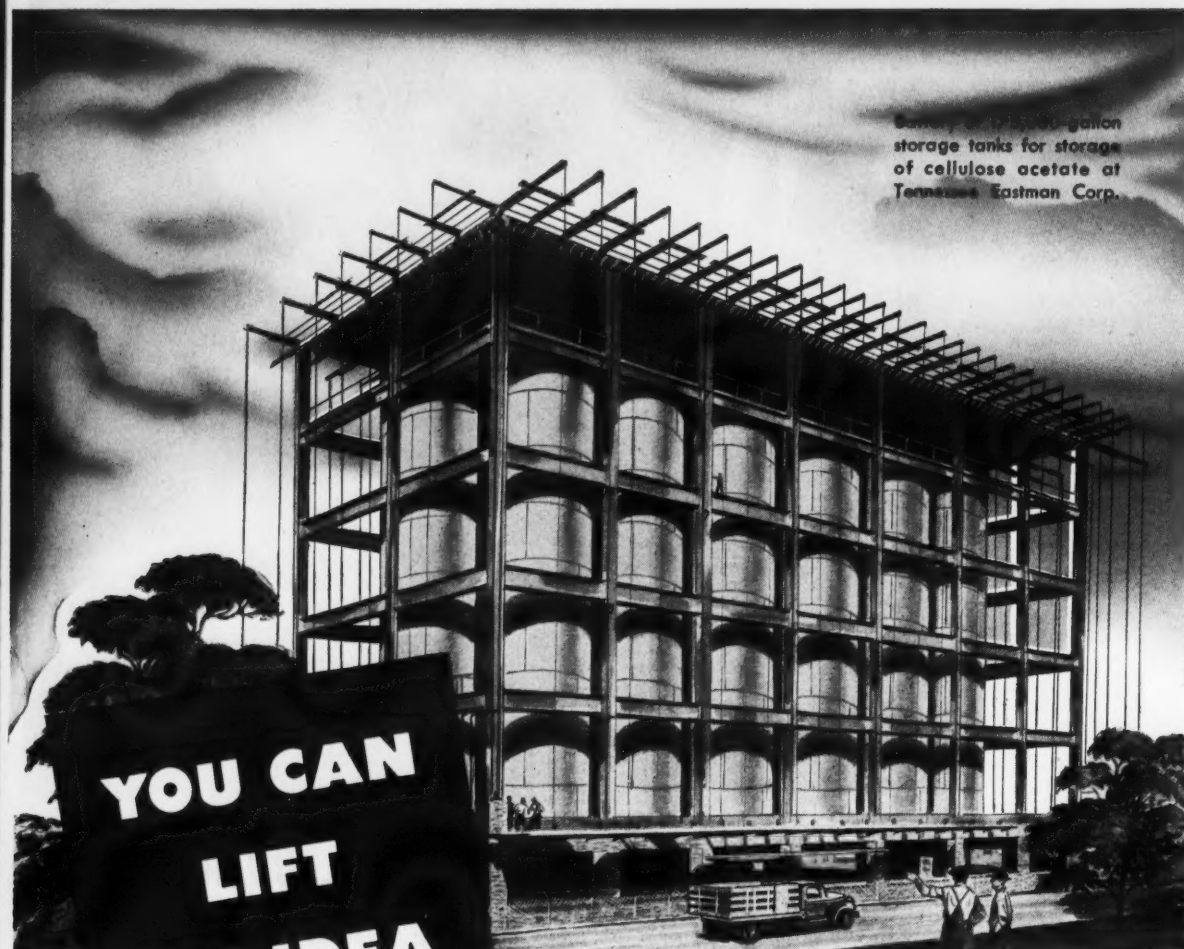
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Dayton Rubber

When inquiring check CP 4229 on handy form, pgs. 2-3



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ALCOA ALUMINUM



When inquiring check CP 4230 on handy form, pgs. 2-3

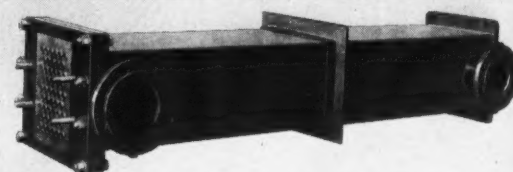
New Solutions OF PLANT PROBLEMS

Tantalum Heat Exchanger Resists Action of Chlorinated Brine

*Cools 80 gallons of brine per minute from
70.2° C. to 59° C.*

PROBLEM — Heat exchanger used in cooling chlorinated brine in connection with its circulation in the chlorine cell had low heat transfer rate. The plant in which this equipment was installed found it was necessary to make repairs or replacement at too frequent intervals, because it did not stand up under the corrosive action of the brine.

SOLUTION — A shell and tube type heat exchanger was installed to cool sodium chloride brine containing dissolved chlorine in saturated solution. Welded tantalum tubes and sheets were used in fabricating the unit.



Tantalum brine cooler handles sodium chloride brine, with dissolved chlorine in saturated solution. Unit contains 50 tantalum tubes $\frac{3}{4}$ " diameter, 66" long, 0.013" wall, welded construction, totaling 53.8 sq. ft. of effective cooling area.

Expansion coefficient of tantalum is linear. Its coefficient is approximately half that of steel, four-tenths that of copper, and three-tenths that of silver. This difference in expansion was taken into consideration in designing the heat exchanger since it was used in conjunction with other materials.

Thermal conductivity of tantalum is approximately the same as that of steel. Since the actual rates of heat transfer through tantalum are high, with the absence of any corrosion, wall sections of the tubing employed in the heat transfer equipment were made very thin, so that the actual thermal conductivity of the metal is almost a negligible factor.

In addition to processes involving chlorine and its compounds, tantalum is also recommended for use with other processes including hydrochloric acid, or substances containing chlorides or hydrochloric acid. It is totally inert to wet or dry chlorine, bromine and iodine at temperatures below 150° C. Boiling aqua regia does not attack tantalum.

In practically all chemical plant equipment where tantalum is used, the metal is used as the heat transfer surface, other materials being used for housings, containers, piping, fittings and accessories. Such materials include ceramics, glass, glass-lined steel, rubber-lined steel, impregnated carbon and phenolic plastics.

High melting point of tantalum may give the impression that it is heat resisting as well as corrosion-proof. This is not true since its safe temperature limits are lower than those of many metals with much lower melting points. At approximately 175° C. it reacts with chlorine. At higher temperatures, it reacts with other gases, and at very high temperatures it will combine or react with most of the elements. Mercury and the noble gases apparently do not combine with tantalum at any temperature up to its melting point.

Tantalum is available in the form of sheets, foil, rod, wire, ribbon and tubing.

RESULTS — Tantalum heat exchanger will stand up

CHEMICAL PROCESSING Preview

New Solutions OF PLANT PROBLEMS

as long as the process since there is no gradual deterioration due to corrosion. Only mechanical failure can cause its breakdown.

Unit handles 80 gallons of chlorinated brine per minute. Brine is cooled from an inlet temperature of 70.2° C. to an outlet temperature of 59° C. Cooling water enters at 20.4° C. and leaves at 34.5° C. Velocity through the unit is 2' per second.

SOURCE — Heat exchanger was designed and built by Fansteel Metallurgical Corporation, Dept. CP, North Chicago, Ill. . . . or for more information check CP 4231 on the handy form, pages 2 and 3.

Welding Salvages 2-Ton Casing

Technique and rod used applicable to salvage of large processing units



Welding salvages crankcase

and pulling the broken edges together. This offered a particularly difficult job since the heavy casing walls averaged 1 inch in thickness.

SOLUTION — In handling this welding operation a special $\frac{1}{8}$ inch alloy rod for cast iron — EutecTrode 24 was used to avoid excessive fusion and heat absorption by the casting.

A great number of passes were made, consuming a total of 30 pounds of rod. Welds were made both inside and outside, to restore oil channel.

While the welding sequence might have been varied somewhat, the original ruptures did not extend quite to the ends of the casting, and weld appears smooth.

The rod used develops a tensile strength of 55,000 psi, and the weld is readily machinable. Peening was used together with the slight pre-heat, to stress relieve the finished sections. The preheat was provided by means of a flood light left in the casting overnight.

RESULTS — Since normal replacement of this crankcase would have required three months delay, this loss of time in dredging operation served by the engine was avoided.

SOURCE — The unusual welding job described here was performed with rod produced by the Eutectic Welding Alloys Corp., Dept. CP, 40 Worth St., New York 13, N. Y. . . . or for more information check CP 4232 on the handy form, pages 2 and 3.

MARCH, 1948

PROBLEM — A massive Fairbanks-Morse 300 hp marine engine casting had been shattered by a broken bolt driven through it by the crankshaft.

The casting consisted of a two-ton crankcase 10 feet in length.

The repair involved aligning the ruptured sections by passing a threaded rod along the oil sump channel

New chemicals are always a challenge to the industrial chemist — a stimulating challenge to examine, to modify — and, finally, to adapt.

Particularly challenging are the three new chemical groups Armour now presents for your investigation: the Ethomeens, the Ethomids, and the Ethofats. So far, these cationic and non-ionic chemicals have proven themselves particularly valuable as wetting agents, detergents, emulsifiers (and emulsion-breakers), and as chemical intermediates. But very frankly, Armour feels that these uses merely skim the surface of their industrial possibilities — especially considering that some forty basic products (each in a wide range of solubilities) can be produced in commercial quantities.

A booklet on the Ethomeens, Ethomids and Ethofats is available upon request. It describes the general characteristics and properties of these surface-active chemicals, plus their known and indicated uses. Also included is a complete product listing from which samples may be requested for laboratory testing. **ACCEPT THE CHALLENGE TODAY!**

ARMOUR

Chemical
DIVISION

1355 West 31st Street
Chicago 9, Illinois

Armour Presents

THREE NEW GROUPS
OF CHEMICALS WITH

a challenge to the chemical world

Presenting the Ethomeens!

The Ethomeens, a series of related chemicals made from the Armeens (Armour's fatty amines) are cationic in character and can be made with varying degrees of cationic tendencies. The Ethomeens are stable to hydrolysis in all concentrations of acids and bases. Indicated uses: as germicides, as wetting agents, as detergents in acid solutions, as waxes, as emulsifiers.

Presenting the Ethomids!

The Ethomids are a group of chemicals made from the Armids (Armour's fatty amides) and, being non-ionic in character, are compatible with anionic, cationic and non-ionic surface active materials. The Ethomids tend to be more stable to hydrolysis than the Ethofats in medium concentrations of acids and bases. Indicated uses: as detergents, as emulsifying agents, as wetting agents, as waxes, as dispersing agents.

Presenting the Ethofats!

The Ethofats are chemicals prepared from the Neo-Fats (Armour's fatty acids) and are also non-ionic in character. They are stable in mild acids and bases. The Ethofats are excellent non-sudsing detergents (even for cottons) and can be built with alkaline salts. Other indicated uses: as emulsifiers, as stabilizers in the compounding of natural and synthetic latex, as wetting agents, as detergents in dry cleaning solutions.

MAIL THIS COUPON TODAY!

(Attach to your business letterhead, please)

ARMOUR CHEMICAL DIVISION
1355 West 31st Street — Chicago 9, Illinois

Please send me the new booklet on

The Ethomeens, Ethomids and Ethofats

Name.....Title.....

Firm.....

Address.....

City.....Zone.....State.....

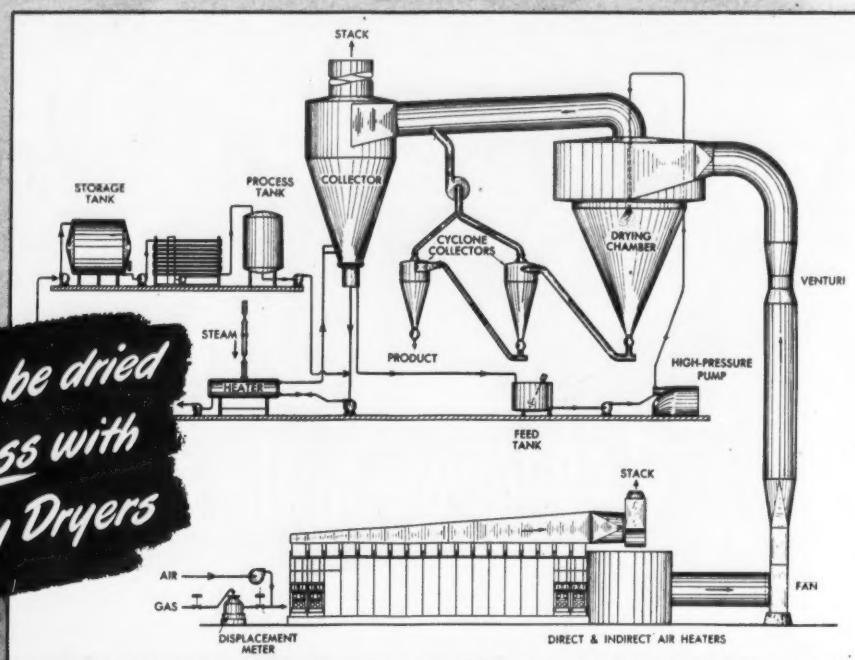
When inquiring check CP 4233 on handy form, pgs. 2-3

30 SECONDS from Liquid to Powder!

*Chemicals can be dried
in a single pass with
Swenson Spray Dryers*

These are but a few of the many products that have been successfully spray dried:

Alfalfa extract
Animal blood
Calcium carbonate
Distillery slop
Dyes and dyestuffs
Magnesium carbonate
Manganese sulfate
Pentaerythritol
Pharmaceuticals
Pigments
Polyvinyl Resins
Starch (textile)
Sulfite waste liquor and lignins
Tannin liquors
Zinc sulfate



Flowsheet of Swenson Spray Dryer Testing Laboratory, Harvey, Ill.

No preliminary processing is necessary. The Swenson Gray-Jensen Spray Dryer will handle any materials that can be pumped—solutions, emulsions, slurries, or pulps. In less than 30 seconds it converts such materials into thoroughly dry homogeneous powders that require no milling.

Drying takes place at or near wet bulb temperatures, and the equipment is designed to make efficient use of heat input, discharging fully saturated air without powder entrainment.

Have you a process that can benefit from spray drying? Swenson engineers will gladly co-operate with you through the facilities of the Swenson Spray Dryer Research Plant.

SWENSON EVAPORATOR CO.
Division of **WHITING CORPORATION** Harvey, Ill.

Export Department 30 Church Street, New York 7, N. Y.

New Solutions OF PLANT PROBLEMS

Neoprene Pads Absorb Vertical, Side-Thrust Vibration Impulses

Pads 5/16" thick give optimum absorption under 50 lb. sq. in. loads

PROBLEM — Manufacturing plant had engineering offices and drafting rooms located on floor above department where a variety of machines were in constant operation. Transmitted vibrations and noise made it difficult for those on this floor to work efficiently.

While use of vibration-absorbing pads was, of course, an indicated solution the selection of type of pad and installation was given careful study.

It was important that the insulating pads provide necessary absorption of both vertical and side-thrusting impulses.

Sufficient life of the pads so that frequent replacement would not be required also was a factor. Oil from the machines would be dropped and the pads would have to resist deterioration from that source.

SOLUTION — A new type of vibration absorber was installed for each machine. It combines the easy installation of pad type cushions with the effective absorption of molded type suspension. These mounting pads are molded of a resilient Neoprene composition.

The pad is molded in the form of a sheet with a series of mutually perpendicular ribs on either side of a central plane. Flexibility is combined with stability in all directions and the design provides efficient absorption of both vertical and side-thrusting impulses. Standard pads are 5/16 of an inch thick and as large as 18 by 18 inches. (Other sizes and shapes are also available.) In this, as in other installations, single thicknesses were entirely adequate and suitable for optimum absorption. Multiple thicknesses take care of heavier loads. (Ceiling-mounted equipment can also be equipped.)

RESULTS — To measure the magnitude of the change produced by the use of the pads, tests were made to determine magnitude and frequency of vibrations transmitted to the building structure. A special pick-up was used which converted vibrations into electrical output the magnitude of which could be observed on a cathode ray oscillograph. The table shows the values obtained at each supporting leg of the punch press tested during actual operation. Vibration was measured in terms of the root square means values of acceleration in inches per second, per second. Data in the table show intensity of transmitted vibration both before and after the isolating pads were installed. Figures indicate 72% of transmitted vibration damped out.

Motor Running Machine Operating	In Direct Contact with Floor	Machine Mounted On Isomoda Pads	% Reduction
Leg No. 1	100.0	27.0	73
Leg No. 2	120.0	26.0	78.4
Leg No. 3	180.0	50.0	72.2
Leg No. 4	120.0	35.0	70.8

SOURCE — From data of E. I. du Pont de Nemours & Co. (Inc.), Dept. CP, Wilmington, Del. . . . for more information check CP 4235 on the handy form pages 2 and 3.

For more information on product at right, specify CP 4236 . . . see information request blank between pages 2-3.

When inquiring check CP 4234 on handy form, pgs. 2-3

PROBLEMS

Vertical,
impulses

absorption

ad engineering
n floor above
s were in con-
and noise made
k efficiently.

was, of course,
pe of pad and

provide neces-
e-thrusting im-

nt replacements
Oil from the
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e effective ab-
these mounting
e composition.

et with a series
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ith stability in
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pulses. Stand-
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(also available.)
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um absorption.
oads. (Ceiling
d.

of the changes
were made to
brations trans-
al pick-up was
ctrical output,
d on a cathode
alues obtained
tested during
d in terms of
tion in inches
table shows
fore and after
indicate 72%

On	%
Reduction	73
	78.4
	72.2
	70.8

de Nemours
l. . . . or for
handy form,

right,
request

G Preview

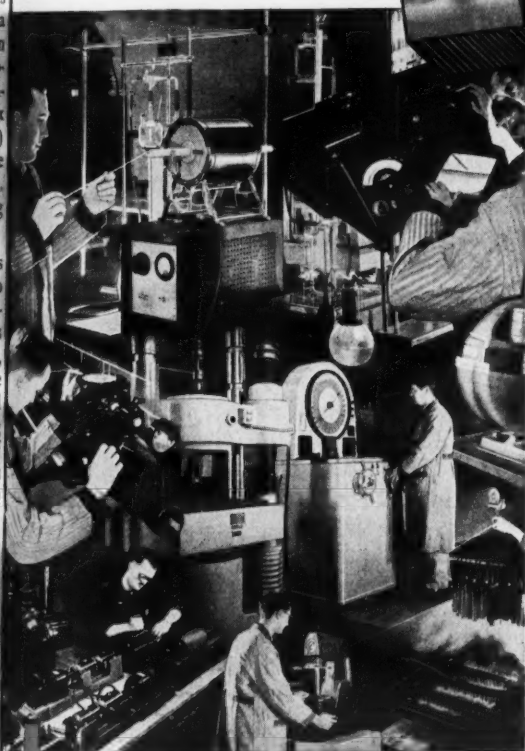


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PROOF
OF LADISH
Controlled Quality

You have scientific proof of metal soundness in seamless welding fittings when you specify Ladish.

Certified laboratory reports . . . available on request by referring to the Ladish heat code symbol of Controlled Quality marked on every fitting . . . provide complete test data on chemical composition and physical properties of the steel heat from which any Ladish fitting was forged. Here is actual proof of reliability which assures extra years of trouble-free piping service when you install Ladish Seamless Welding Fittings.



A COMPLETE LINE PRODUCED UNDER ONE ROOF
... ONE RESPONSIBILITY



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**QUALITY IS THE
RULING INFLUENCE IN THIS PLANT**

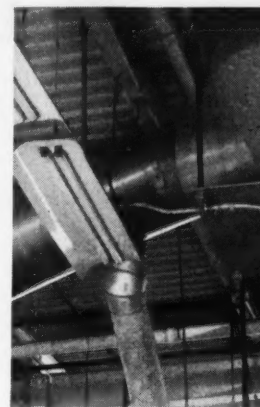
To the thousands of skilled workmen in Ladish's modern plant, Controlled Quality is both a tradition and a daily challenge. "How can we improve quality" is always a prime concern in the plant as well as the laboratory.



One Fan Exh Heat From

*Units placed on open floor
by ducts; fan also*

PROBLEM — Plant un-
operate one large anneal-
annealing furnace, two cy-
furnace and one heat treat-
tank. Plant managers w-
units on the open floor o-
a separate room. Thus,
system was needed to exh-
keep them from spreading



Single fan serves mult

It was also necessary to
hausting dust from a grin-
room. Here, another duct
However, it was desired
just for this single unit.

FEATURES — The variou-
to the best advantage an-
ly placed over each unit.
units to one fan. (see i-
duct was installed to lead
connect the grinder to the

RESULTS — A very effi-
was provided at reasonab-
of an additional fan for gr-
Fumes are drawn out of
away from plant areas. I-
quired for furnace operati-

SOURCE — Data on thi-
pellair, (Div. Robbins &
Springfield, Ohio, manu-
... or for more informa-
the handy form, pages 2 a

Do You Have a

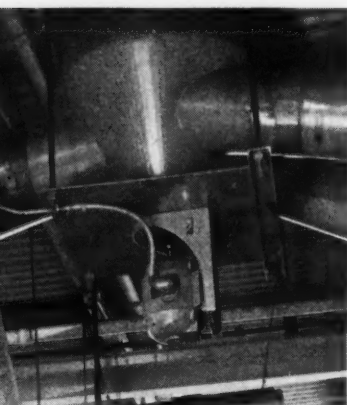
Has a recent use of your
solved a difficult chemi-
may concern some new o-
plication of a standard u-
line. Submitted data sho-
operation; (2) Difficultie-
product was applied to p-
modified form; (4) Result-
time, power, increased pro-
quality. Address the Editor

CHEMICAL PROC

737 N. Michigan Ave.

Fan Exhausts Fumes,
From 6 Furnaces
on open floor of shop and served
; fan also serves tool room

Plant under construction was to
large annealing furnace, one small
ace, two cyanide pots, one induction
ne heat treating furnace with quench
managers wished to place all these
open floor of the shop rather than in
om. Thus, an efficient ventilating
eded to exhaust fumes and heat and
om spreading throughout the plant.



n serves multiple-duct installation
necessary to make provisions for ex-
from a grinder in an adjacent tool
another duct fan would be indicated.
was desired to avoid this expense
ngle unit.

The various furnaces were grouped
advantage and suitable hoods proper-
each unit. Ducts lead from these
fan. (see illustration) A seventh
lled to lead into the tool room and
inder to the fan.

A very efficient exhausting system
at reasonable cost and the expense
al fan for grinder room was avoided.
own out of the building and kept
nt areas. No separate room is re-
nace operations.

Data on this installation from Pro-
Robbins & Myers, Inc.), Dept. CP,
Ohio, manufacturers of fan used,
ore information check CP 4237 on
n, pages 2 and 3.

You Have a New Solution?

use of your equipment or product
difficult chemical plant problem? It
some new development or the ap-
a standard unit or material in your
ted data should tell (1) Nature of
(2) Difficulties involved; (3) How
applied to problem, in standard or
(4) Results in terms of savings in
increased production or in improved
cess the Editors.

CAL PROCESSING Preview
Michigan Ave. Chicago, Ill.



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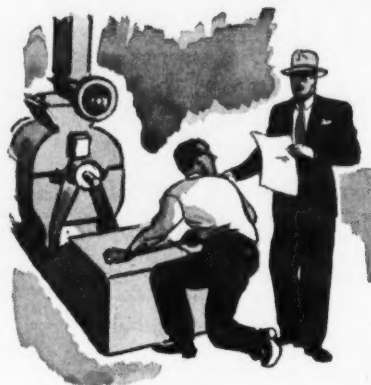
Looking for Motors? Maybe We Can Help You!



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Do You Need General-Purpose,
squirrel-cage motors from 1 to 200 hp?
Get in touch with your nearby Allis-
Chalmers *Authorized Dealer* or District
Office. Either may be able to help you
from stock right now!



But For Really Big Motors—250 to
25,000 hp and over—call your Allis-
Chalmers *field engineer*. He's an *ex-
pert* on motors—can help you solve
difficult drive problems, involving large
or small motors, in the most economi-
cal manner.

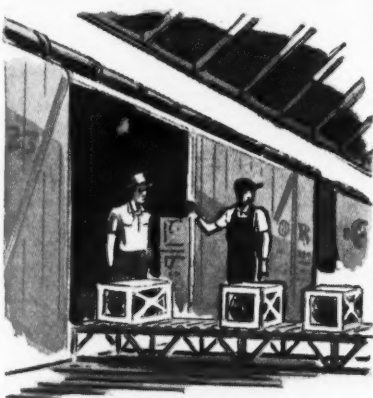
**MOTOR
SCHEDULE**

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

200 HP, 1800 RPM?
...JUST A SECOND
MR. SMITH, I'LL CHECK
MY SCHEDULE.



Want Reliable Information on motor
delivery? Call *either* your Allis-Chalm-
ers dealer or district office. They have
up-to-the-minute delivery information
available to them!



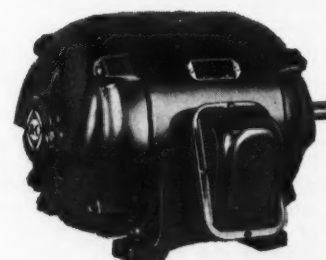
**The Delivery Picture's getting bright-
er!** Our motor-building capacity has
been greatly increased. We've put new
methods, new equipment to work to turn
out *more* motors for industry, faster!

Motor "Headquarters"—1/2 to 25,000 hp and Up!

YOU SELECT from a *wide range* of mo-
tors when you call on Allis-Chalmers.
And you can count on *expert* motor
advice, too! The best possible motor se-
lection is the result of careful appraisal
of drive characteristics, the driven equip-
ment, power source and surroundings.
The best motor may not always be the
first that meets the requirements.

Allis-Chalmers authorized motor deal-
ers or factory representatives can help
you choose wisely. They can save you
time and money. **ALLIS-CHALMERS, MIL-
WAUKEE 1, WIS.**

A 2401



ALLIS-CHALMERS

One of the Big 3 in Electric Power Equipment—Biggest of All in Range of Industrial Products

When inquiring check CP 4238 on handy form, pgs. 2-3



Kreeleon — 4D and 7D are in flakes, with thickness held within 0.004 and 0.007 in. 4G (extreme right) is powdered. All forms are white to cream in color and of faint, pleasant odor

Detergent Highly Efficient in Acid, Alkaline Solutions, Soft, Hard Water

Used in paper, metal, textile industries; may be incorporated with water-dispersible insecticides; also in brewery bottle washing

USES — In paper industry for wetting out in beaters to aid in dibrillation of pulp; for the dispersion of waxes, resin and pigments in paper coating and printing; as a bleaching agent; washing paper mill felts.

Also, in salting of green salted skins and other applications in leather industry. In textile applications where surface active agents are required that perform well in both hard and soft water, and in alkaline and acid media and as a detergent in scouring. In metal processing it is used in immersion tank electrolytic baths, tumble and rotary washers, etc. It is of interest as an additive to electroplating solutions to promote adherence, more uniform plate thickness, better rinsing.

It is used to advantage in bottle washing in breweries, in industrial laundries and in general plant cleaning.

FEATURES — The surface tension lowering of water and its solutions by small quantities of Kreeleon is apparent from test data. The greatest reduction takes place in the case of hard water. Intimately related to effective detergency is the efficient wetting out action of materials not readily wetted by water alone. Tests indicate the extremely rapid action of Kreeleon. The sink time of canvas discs in distilled water is a matter of hours, but with the addition of Kreeleon, only a matter of seconds.

Kreeleon produces abundant suds in distilled water, alkaline or acid solutions. Illustration shows test demonstrating sudsing action of 0.1% Kreeleon solution in distilled water, 0.05% NaOH, 0.05% HCl and 150 ppm hardness expressed as CaCO_3 .

The value of Kreeleon lies in its ability to function effectively in acid, alkaline, or neutral solutions, in hard or soft waters, alone or combined in solutions and dry mixes with a large number of other chemicals.

Materials

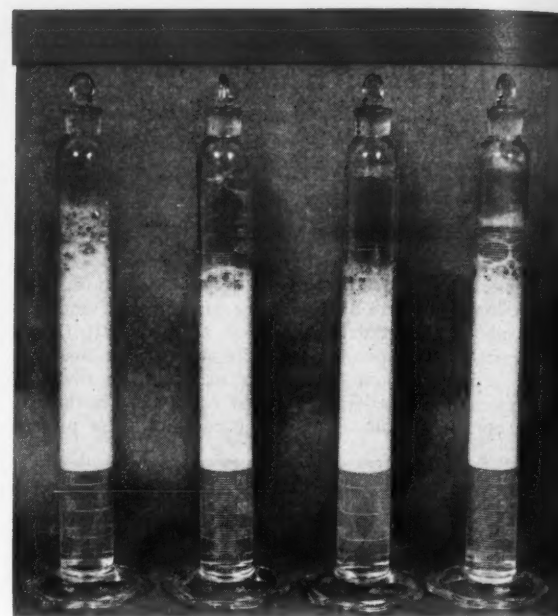
DESCRIPTION — This synthetic organic detergent is of the sodium alkylarylsulfonate type. It is broadly classified as a surface active agent and it demonstrates to a varying degree the following properties: wetting, penetrating, spreading, emulsifying, dispersing or peptizing, surface tension lowering, cleaning and detergency.

It is produced from benzene, chlorine, caustic soda, sulfuric acid and petroleum. All forms (4D, 4G and 7D) are white to cream in color and of faint characteristic pleasant odor. Form 4G was developed in powder form to facilitate compounding with other powdered materials. Approximate composition — Percent organic sulfonates 40 for both 4D and 4G; 65 for 7D. pH at 77 degree F. (25° C.) in 1% distilled water solution is 7.5-8.0 for all three.

Solubility in all waters from 0 to 440 ppm hardness (expressed as CaCO_3) is independent of the hardness.

In hard water a partial reaction occurs between the calcium and magnesium salts and the alkylarylsulfonate in Kreeleon. Kreeleon does not form insoluble combinations with the calcium and magnesium salts, and the products of reaction do not possess detergent properties. It is interesting to note that, while the carbon soil removal properties are somewhat depreciated in hard water, the whiteness retention characteristics are appreciably improved.

Stability is retained in acid and alkaline solutions of concentrations far above those normally encountered in



Kreeleon 0.1% solutions show no appreciable difference in sudsing quality in distilled water, 0.05% NaOH, 0.05% HCl, and 150 ppm — CaCO_3 .

industries where surface active agents are employed. Essentially all properties are retained in strong acids and alkalis. Kreeleon will not oxidize or turn rancid if retained in fabrics due to inadequate rinsing.

Kreeleon is but slightly soluble in organic liquids due to the presence of organic salts. Its uses, therefore are generally restricted to processes employing water. However, a number of successful applications in organic media have been found.

Possible applications for Kreeleon in addition to those already described are pigment grinding aid, dispersion agent for emulsion type coatings, latex stabilizer, and rubber mold lubricant.

SOURCE — Wyandotte Chemicals Corp., Dept. CP, Wyandotte, Mich. A major portion of this development was accomplished through the construction and operation of the pilot plant pictured in the cover illustration . . . or, for more information check CP 4239 on the handy form, pages 2 and 3.

Rubber Hose Carries Acid Mine Water that Ate Up Metal Pipe

First mine application of hose-pipe used as abrasive conduit in salt, sand industries

USES — Commonly used as a pipeline for service involving electrolysis and corrosion, and as a conduit for abrasive in salt, sand and gravel industries. It has now been successfully installed in an Ohio coal mine to replace a 600 foot metal pipe used in ejecting acidic water.

FEATURES — Especially compounded to withstand corrosive chemicals. Tube of this rubber pipe is especially compounded for conducting corrosive chemicals and is reinforced with multiple plies of fabric and a helix of high tensile strength steel wire.

CHEMICAL PROCESSING Preview

DESCRIPTION — This hose is named Diversipipe and its flexibility permitted its installation in the Wolf Run mine of the Warner Collieries Co. at Amsterdam, Ohio, running the air shaft route to discharge above ground. This shortened the old line by 220 feet.

The water condition developed over eighteen months ago, seeping into the main entry from an abandoned walled up room. A pump and 600 feet of pipe were first installed. However, the water is of such high



Flexibility of rubber hose-pipe reduces required length of mine water discharge line 200 feet

acid content that the constant replacements necessary because of pipe perforations made replacements too costly.

The rubber pipe was installed in a single line of eight sections, totaling 380 feet. A novel installation feature, designed by the Goodyear engineers, permitted the four-inch Diversipipe to be suspended vertically in the air shaft, supported on either side by parallel steel cables.

SOURCE — The hose described in the coal mine application is made by the Goodyear Tire & Rubber Co., Dept. CP, Akron, Ohio . . . or for more information check CP 4240 on the handy form, pages 2 and 3.

★

Ion Exchange Resins Simplify, Save Time in Chemical, Bottling, Paper, Dye Industries

The part played by ion exchange resins in water treatment and chemical processing is described in a 28-page booklet. Contributions toward simplification and time-saving in the chemical, bottling, paper, ice, canning, textile, dye and pigment industries are discussed.

Processes described include isolation of rare earth metal salts, control of alkalinity, concentration of chemical elements, recovery of acids, prevention of scale in heat transfer processes, liberation of weak bases and adjustment of salt content. Title: "The Role of the Amberlites." Issued by The Resinous Products and Chemical Company, Dept. CP, W. Washington Square, Philadelphia 5, Pa. When inquiring specify CP 4241 on handy form, pages 2 and 3.

MARCH, 1948



In the treating of metal for corrosion resistance, phosphoric acid and other specially developed compounds are widely used by manufacturers of automobiles, telephones, washing machines, water heaters, stoves, etc. Solutions containing Victor* Phosphoric Acid form effective, rust-retarding phosphate coatings on iron and steel surfaces, and provide a more perfect bond between the paint and metal.

A Helping Hand for METAL TREATING

for 50 years
VICTOR
CHEMICALS
for everyday Living

*TRADE MARK



Victor chemicals used in metal treating, cleaning, plating, polishing and the manufacture of alloys include:

- Ferrophosphorus** . . . manufacture of special steels and foundry iron.
- Oxalic Acid** . . . cleaning railroad cars, brass polish, rust-proofing.
- Phosphoric Acid** . . . metal cleaning compounds, rust-proofing, railroad car cleaning, electro-polishing.
- Sodium Phosphates** . . . cleaning compounds, tin plating, degreasing.
- Wetting Agents** . . . accelerate action of cleaning compounds.
- Hemisodium Phosphate** . . . contact tinning of brass.
- Phosphorus** . . . manufacture of phosphor-copper.
- Sodium Acid Pyrophosphate** . . . contact tinning.
- Sodium Formate** . . . plating baths.

VICTOR CHEMICAL WORKS, 141 West Jackson Boulevard, Chicago 4, Illinois

When inquiring check CP 4242 on handy form, pgs. 2-3

Stabilizer Retards Lumping of Heavy Paste Starch Solutions

Small quantity required for maximum results

USES — For fluid or heavy paste starch solutions such as those used in textile processing and adhesives.

FEATURES — Solutions made from starches to which this stabilizer has been added remain more fluid as "set" is retarded and lumping is prevented. Even if "set" occurs, the effectiveness of the stabilizer is not lost since the "set" can be overcome readily by stirring.

DESCRIPTION — The stabilizer, named "Flovis" is added to the starch during the boiling process in amounts of from 0.5 per cent to 2 per cent of the weight of the starch.

SOURCE — Product of Glyco Products Company, Inc., Dept. CP, 26 Court St., Brooklyn, N. Y. . . . or for more information check CP 4243 on handy form, pages 2 and 3.

★

Diisobutyl Phenol-Intermediate — Features Exceptionally Good Color

*Low cost alkylated phenol has coefficient of 158;
used in preparation of derivatives*

USES — Chemical intermediate in the preparation of corrosion inhibitors, rust preventatives, and antioxidants. Also dispersing agents, wetting, wetting agents, dyestuffs and pharmaceutical compounds. Also serves an important function as a stabilizer for ethyl cellulose.

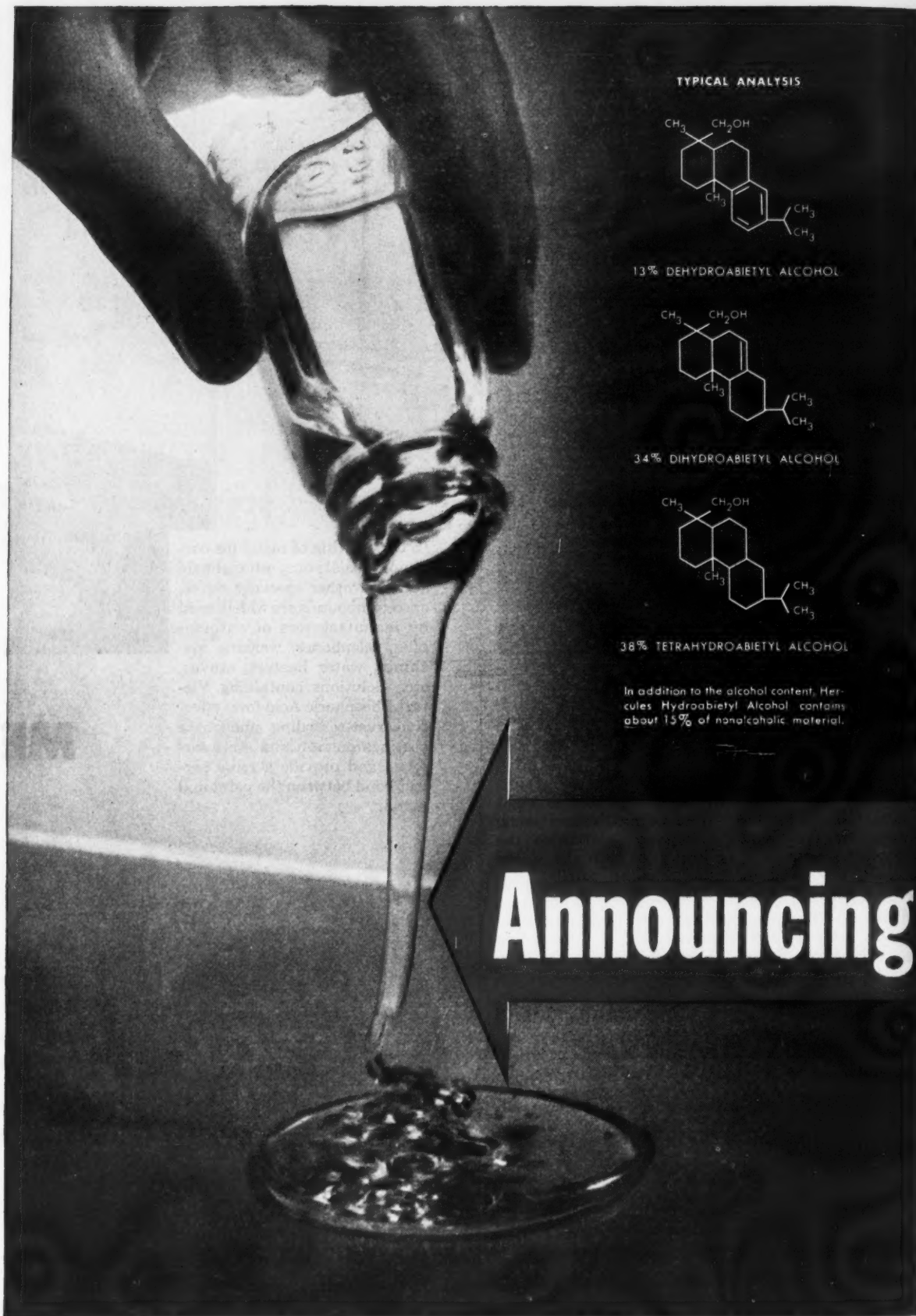
FEATURES — This white distilled product in flake form possesses unusual good color stability for a phenol. Very soluble in alcohol, acetone, benzene, ether, chloroform and carbon tetrachloride.

DESCRIPTION — Octyl Phenol (diisobutyl phenol) is a low cost, alkylated phenol. In general, it behaves as a typical phenol in its reaction with aldehydes. Moreover, ethers, and amino, nitro and halogenated derivatives of Octo Phenol can be prepared.

Octo Phenol is practically insoluble in both hot and cold water. In aqueous solutions of caustic alkalis, such as sodium hydroxide or potassium hydroxide, phenates are formed which show limited solubility in water and have a soapy consistency. A mixture of equal parts of methanol and 50% aqueous potassium hydroxide solution, however, will dissolve Octo Phenol.

In addition to those materials already mentioned, Octo Phenol is soluble in aliphatic hydrocarbons such as petroleum ether and diisobutylene, to a limited extent.

It has good bactericidal and preserving properties. Phenol coefficient is 158. It will kill *Staphylococcus aureus* in 15 seconds at a concentration of 0.025% and in 10 minutes at a concentration of 0.01%. Its aqueous soap solutions, however, show a marked decrease in bactericidal action and lose it entirely in solutions above 1:500. Exceptions are the aqueous solutions with sulfonated oils as dispersing agents



TYPICAL ANALYSIS

CC1(C)C(CO)C2C(C1)C(C)C3C(C2)C(C)C(C)C3

13% DEHYDROABIETYL ALCOHOL

CC1(C)C(CO)C2C(C1)C(C)C3C(C2)C(C)C(C)C3

34% DIHYDROABIETYL ALCOHOL

CC1(C)C(CO)C2C(C1)C(C)C3C(C2)C(C)C(C)C3

38% TETRAHYDROABIETYL ALCOHOL

In addition to the alcohol content, Hercules Hydroabietyl Alcohol contains about 15% of nonalcoholic material.

Announcing



For many years published research of both American and European laboratories has disclosed a wide variety of valuable products that may be derived from hydroabietyl alcohol. Now, Hercules announces the first commercial production of this interesting chemical material.

Hercules hydroabietyl alcohol is the most resistant to discoloration and degradation by light or air of all rosin derivatives. It is a viscous liquid at room temperature; is colorless, tacky, and not miscible with water, in contrast to more commonly used alcohols.

Like other high molecular weight primary alcohols, hydroabietyl alcohol is subject to esterification with both organic and inorganic acids, and etherification. It is miscible with alcohols, ketones, esters, ethers, hydrocarbons, and chlorinated hydrocarbons, and is compatible with many film-formers and resins used in protective coatings, adhesives, and other products.

Research indicates that this new rosin alcohol may be reacted to yield resins, foamers, detergents, wetting agents, emulsifying agents, plasticizers, corrosion inhibitors, antioxidants, parasiticides, bactericides, and compounds highly stable to ultra-violet light. It may be used without further chemical reaction as a modifier for chlorinated rubber, polyamides, hydrogenated oils,

textile sizes, rubber compositions, and essential oil vehicles.

Never before has industry had the opportunity to investigate the potentials of this low-cost alcohol. Now, with commercial production in full swing at a new Hercules plant, hydroabietyl alcohol is immediately available to industry in quantity. Mail coupon for further technical details and a sample of hydroabietyl alcohol.

PHYSICAL PROPERTIES

Hydroxyl Value	5.0-5.1%
Per Cent Hydroabietyl Alcohol	85-87%
Saponification Number	5-14
(Diethylene glycol method)	
Acid Number	0.1-0.4
Methoxyl Value	0.5-1.2
Unsaturation: Weight %	
By Hydrogen Absorption	0.60-0.75
By Bromine Number	12-30
Color (50-mm. tube)—Lovibond	0.5 Amber
U. S. Rosin Standard	Z7
Softening Point (Hercules Drop Method)	33°C.
Specific Gravity at 20°/20°C.	1.007-1.008
Pounds/Gallon at 20°C.	8.34
Refractive Index at 20°C.	1.528
Flash Point (Cleveland Open Cup)	185-195°C.
Flame Point (Cleveland Open Cup)	217-220°C.
Metals (spectroscopic analysis)	Each less than 1 p.p.m.

alcohol from rosin!

HERCULES

CHEMICAL MATERIALS FOR INDUSTRY

HERCULES POWDER COMPANY

940 Market Street, Wilmington 99, Delaware

Please send technical details on hydroabietyl alcohol ☐
Send 1 qt. sample ☐

Name.....

Title.....

Company.....

Street.....

City.....Zone.....State.....

SA8-1

When inquiring check CP 4244 on handy form, pgs. 2-3

Materials

which in dilutions up to 1:1000 exhibit bactericidal activity. In relations to its stabilizing ethyl cellulose concentrations of 1 to 3 percent of the weight of the ethyl cellulose have been found to improve the heat and ultra-violet stability of this cellulosic where optimum durability is desired. It can be incorporated in ethyl cellulose compounds by the use of Banbury type mixing equipment or in solvent solutions.

SOURCE — Resinous Products & Chemical Co., Dept. CP, Philadelphia 5, Pa. . . . or for more information check CP 4245 on handy form, pages 2 and 3.

★

Organic Fillers Improve Resins, Adhesives, Rubber; Cut Cost

Possess high degree of uniformity; used in adhesives to 60% with no loss in strength

USES — As a filler in adhesives, plastics, rubber. The two grades in which it is available (Solka-Fil B-1 and Solka-Fil 400-1) are each designed to impart maximum benefit in particular applications. The former, as a plastics filler, may be incorporated in quantity to produce finishes of comparable value to those containing ordinary wood flour. It is used advantageously in linoleum, rubber mats, wheels, toys, floor coverings, etc. It has even been adopted in paints and cements as well as in adhesives.

Solka-Fil 400-1 is more readily dispersable and is especially useful as a fibrous filler for aqueous and solvent dispersions of high molecular weight substances, where it contributes higher viscosity and tougher deposited films. In plastics molding powders it contributes desirable mold flow characteristics and encourages production of very smooth surfaces.

FEATURES — Selected source of raw materials, combined with production technique results in high degree of uniformity. Particularly important is the property of fibrous Solka-Fil to toughen resin films and reduce crazing.

DESCRIPTION — SolkaFil products are ligneous organic fillers. Both the Solka-Fil products referred to here are derived from the same raw materials, and each will give consistent pH's by water extraction of about 4.1.

Non-fibrous extenders have been used as adhesive fillers, but Solka-Fil is indicated as one which is valuable for the bodying effects obtainable. It permits extension through solvent dilution, at the same time retaining body in those cases where specifications limit the quantity of filler that may be employed. It can also be used in combination with fibrous fillers, widening available viscosity range.

For a pure extension of thermo-setting adhesives, a range of as much as 30% to 60% Solka-Fil has been employed, without sacrificing bonding strength. Like results are obtained in rubber latex adhesives, though somewhat lesser quantities of Solka-Fil are required.

Solka-Fil is commercially available in carload quantities as an air-dry material (7-9% moisture). Packed in multi-wall bags of 60 lbs.

SOURCE — Product of Brown Company, Dept. CP, 500 Fifth Ave., New York 18, N. Y. . . . or for more information check CP 4246 on handy form, pages 2 and 3.

Serving Industry Through Finer Chemicals



NEW HORIZONS...

With their long-range "telescopes" of chemistry and research, industry is forever probing into distance and the future—scanning new horizons for objectives hitherto considered impossible to attain.

Perhaps these lenses of science are seeking a newer and better plastic—a tougher kind of metal

or more potent insecticide—a more exotic perfume or an "antidote" against germ warfare.....

Heyden chemicals have always played a major role in these unpredictable developments. They will continue to anticipate the demands for finer chemicals by the process industries and their tireless research laboratories.

HEYDEN CHEMICAL CORPORATION

393 SEVENTH AVENUE, NEW YORK 1, N. Y.

CHICAGO OFFICE, 20 North Wacker Drive

PHILADELPHIA OFFICE, 1700 Walnut Street



Benzaldehyde • Benzoates • Benzoic Acid • Benzyl Chloride • Bromides • Chlorinated Aromatics • Medicinal Cresolates • Formates
Formaldehyde • Formic Acid • Glycero-phosphates • Medicinal Guaiacols • Hexamethylenetetramine M.D.A. • Paraformaldehyde
Parahydroxybenzoates • Penicillin • Pentaerythritols • Salicylates

When inquiring check CP 4247 on handy form, pgs. 2-3

Materials

Cellulosic Lacquer Resin Has Very Pale Initial Color

Excellent color retention, alcohol resistance, other features

USES — Designed specifically for use in cellulose lacquers. This resin has excellent compatibility with both RS-type nitrocellulose and N-type ethyl cellulose.

FEATURES — Outstanding feature is its extremely pale initial color, coupled with excellent color retention. This property is particularly desired in bleached wood finishes and for white pigmented metal lacquers. Additional features are: alcohol resistance; self-plasticizing; broad compatibility with most common film formers; suitability for use with ordinary lacquer solvent and diluent combinations.

DESCRIPTION — New and third member of series of resins for use in cellulosic lacquers. Cellolyn 95 is completely soluble in a wide variety of organic solvents commonly employed in the formulation of lacquers. It is sold as an 80% solution in toluene. The resin solution is easily diluted and blended. Complete solubility may be achieved in the following solvents. Aromatic hydrocarbons: benzene, toluene, xylene. Esters: ethyl acetate, butyl acetate, amyl acetate, etc. Ketones: acetone, methyl ethyl ketone, methyl isobutyl ketone. Alcohols: butyl, amyl, etc.

Cellolyn 95 is insoluble in the following solvents. Alcohols: — methyl, ethyl, and isobutyl alcohols and diethylene glycol. It is completely compatible in proportions of 3:1, 1:1, and 1:3 with the following film formers: R S-Type nitrocellulose, N-type ethyl cellulose, Melamine-formaldehyde resin (butylated type), Urea-formaldehyde resin (butylated type), polyvinyl chloride, Clorafin 70* and Paralox* (*Hercules Powder Co.) and others. Cellolyn 95 is compatible at proportions of 3 parts film former to one part resin with polyvinyl butyral and VYHH.

SOURCE — From data of Hercules Powder Co. (Synthetics Dept.), Dept. CP, Wilmington, Del. . . . or for more information check CP 4248 on handy form, pages 2 and 3.

★

Permanent Valve Packing Made From 100% Unoriented Teflon

Anti-adhesive and easily deformable

USES — For use by insertion into valve stuffing boxes in the form of a sleeve or bushing. With low nut pressure it flows to the dimensions of the stuffing box.

FEATURES — Chemically inert, anti-adhesive and easily deformable.

DESCRIPTION — Being chemically inert, this packing Chemiseal No. 510 does not require replacement. Anti-adhesive characteristics of the material eliminate freezing and binding of valve stems and reciprocating shafts, and minimum operating force is required on the spindle. The packing is available in a wide range of diameters and lengths.

SOURCE — United States Gasket Co., Dept. CP, 610 North 10th St., Camden, N. J. is the manufacturer of this permanent packing, . . . or, for more information check CP 4249 on handy form, pages 2 and 3.

CHEMICAL PROCESSING Preview

Materials

Diamyl Phenols Used In Resins, Additives

Are mixture of isomers of diamylated phenols

USES — Suggested for use in the production of lubricating oil additives, modified phenolic resins, synthetic detergents, plasticizers, rubber chemicals, and pharmaceuticals.

DESCRIPTION — First of a series of alkylated aromatic compounds scheduled for production. The diamyl phenols, as now produced, are a mixture of the isomers of the diamylated phenols. The amyl substituents include both secondary amyl and tertiary amyl groups attached mainly in the 2,4-positions. This material is an oily, light straw-colored liquid which is miscible with both aliphatic and aromatic hydrocarbons, and is essentially insoluble in water and in 10% aqueous solutions of alkali hydroxides.

Although insoluble in dilute aqueous alkalis, the phenolic hydroxyl group will undergo such typical reactions as acetylation and reaction with formaldehyde.

SOURCE—Koppers Co., Inc., Dept. CP, Pittsburgh 19, Pa. . . . or for more information check CP 4250 on the handy form, pages 2 and 3.

★

Summarizes Literature Concerning Inositol

i-Inositol, chemically identified as hexahydroxycyclohexane, is the subject of a 20-page booklet summarizing the principal literature references. A compound existing in nature in the form of many analogs and isomers, the product is packaged in standard 5-lb. containers, also special packages, by this manufacturer.

Booklet describes its chemical nature, occurrence, discusses it as a growth factor for microorganisms, and gives other useful information. i-Inositol booklet, issued by Corn Products Sales Company, Chemical Division, Dept. CP, 17 Battery Place, New York 4, N. Y. When inquiring specify CP 4251 on handy form, pages 2 and 3.

For more information on product at right, specify CP 4252 . . . see information request blank between pages 2-3.

WITCO CHEMICAL COMPANY

Witco
pigments
in
rubber

For Your Technical Reference Files

Newest addition to the literature published for you by the Witco Technical Service Laboratory is a 32-page bulletin, "Witco Pigments In Rubber." Write for your copy.

Comprehensive data on other specific products of significance to you are covered in our Technical Service literature on a wide range of Witco chemical products for plastics, rubber, surface coatings, paper, ink, drugs and cosmetics. Please address inquiries to Witco Chemical Company, 295 Madison Avenue, New York 17, N. Y.

NEW! NEW! NEW!...

BAKELITE CORPORATION is proud to spread the news of this recently-announced but thoroughly-proved **VINYLITE** Brand resin—a new low-cost material with important possibilities for the coatings industry. Though it has many of the excellent properties of **VINYLITE** resin **VYHH**, it goes far beyond them... in versatility... in compatibility with a vast proportion of common materials, making possible many new types of fortified coatings... in improved adhesion to other finishes... and particularly to the new **VINYLITE** polyvinyl butyl "wash primers." Write at once to Department DH-56 for complete technical data and suggestions for formulation!

VINYLITE Resin VAGH

A New Copolymer of the vinyl
chloride-acetate type

MARINE SYSTEM

An outstanding application. Tests show practically no failure after two years submer-sion. Wash primer WP-1, anti-corrosive primer P-10 based on resin **VAGH** followed by anti-fouling paint AF-14 based on resin **VYHH**, rosin and toxic pigments.

COATINGS FOR WOOD

Resin **VAGH** adheres to shellac and other wood sealers except nitro-cellulose. *Compatible with the hard resins.* Provides improved sanding and polishing characteristics. Suggested for toilet seats, kitchen furniture, children's high chairs, bowls, utensils, tool handles.

ADHESIVES

Resin **VAGH** is most useful in formulation of special purpose adhesives, particularly for bonding vinyl resin sheets or parts to other surfaces.

METAL DECORATING AND CONTAINER COATINGS

Compatibility of resin **VAGH** with stabilizing and heat-reactive resins makes possible improved formulations for roller-coating or spraying on sheet. Adhesion good to lithographed metal or primed stock.

INDUSTRIAL METAL PROTECTION SYSTEM

Where anti-fouling coating is not required, any properly-pigmented high-quality top coating over WP-1 and P-10 will provide very resistant systems for general metal protection.

PAPER COATINGS

Resin **VAGH** overcomes limitations of other vinyl resins in adhesion to oil-base letter-press inks and others. This resin also improves polyvinyl acetate formulations. May be used to fortify other conventional types of paper coatings.

VINYLITE

TRADEMARK

RESINS

BAKELITE CORPORATION, Unit of Union Carbide and Carbon Corporation  30 East 42nd Street, New York 17, N.Y.

When inquiring check CP 4253 on handy form, pgs. 2-3

Materials

Lactoprene Rubber Resists Heat; Polymerization Complete in 1 Hr.

Synthetic rubber has flex life, oil resistance; impermeable to hydrogen

USES — Special properties make it useful for some applications where natural rubber and some synthetic rubbers are not entirely suitable. It should be valuable in products that require unusually good dry heat resistance, excellent flex life and resistance to oxidation, oils and aging at either normal or elevated temperatures.

It is highly superior or advantageous with respect to GR-S in its suitability for production of white stocks or articles having pastel shades.

Typical products for which it might be used include hose, gaskets, packing, conveyor belts, boots, soles, heels, tank linings, gloves and coated cloth.

FEATURES — Most outstanding property is probably its extreme resistance to dry heat. Some of the vulcanizates are indicated as superior in this respect to practically all other elastomers with the exception of the silicones. Lactoprene EP vulcanizates have retained characteristic properties after being heated at 300 degrees F. for approximately 700 hours.

DESCRIPTION — Lactoprene (EV) is the name of this new synthetic rubber, — a copolymer of 95% ethyl acrylate and 5% chloroethyl vinyl ether, which can be transformed into several types of vulcanizate by the use of different compounding ingredients and curing procedures. The selection of compounding ingredients depends upon the type of product needed to suit particular applications.

Polymerization is used in making Lactoprene just as with other synthetic rubbers. Unlike many synthetic rubbers, Lactoprene is not a butadiene or diene copolymer. Although butadiene rubbers and acrylic elastomers are structurally similar in having a long carbon chain, the butadiene chain has olefinic linkages and no ester groups; while the acrylic chain has ester groups and no olefinic linkages.

Lactoprene may be produced much more simply than Butadiene rubbers. Operations are carried on at room temperature and pressure equipment is not required for polymerization or storage. Reaction is carried to completion in a short time — one to two hours.

SOURCE — Summarized from data furnished by the United States Department of Agriculture.

★

Polyisobutylene Concentrates Useful in Flexible and Heat Seal Coatings, Dental Waxes

Properties and applications of Arwax polyisobutylene concentrates are revealed in a 4-page technical data sheet, complete with tables and charts. Tells how product is prepared for various industrial applications involving paraffin.

Typical uses include heat seal coatings, dental waxes, moisture-vapor-proof flexible coatings for paper and plastic films; also chewing gum bases, pressure tapes and emulsions, fruit and vegetable coatings. Arwax Technical Data Sheet, issued by American Resinous Chemicals Corporation, Dept. CP, 103 Foster St., Peabody, Mass. When inquiring, specify CP 4254 on handy form, pages 2 and 3.

CHEMICAL PROCESSING Preview

Materials

Corrosion-Resistant Plastic Coating

Applied to metal, wood by brush, spray or dip method

USES — Maintenance coating and industrial finish providing high resistance to acids and alkalis. It may be applied to steel, brass, copper, aluminum, cast iron, wood, concrete, linoleum, transite, tile and various types of molded plastics.

FEATURES — Combines toughness with capacity to expand and contract without cracking. Exhibits excellent dielectric properties.

DESCRIPTION — Vinyl-Clad is a copolymer vinyl vehicle held in the liquid state by means of aromatic hydrocarbon solvents. It may be applied by brushing, spraying or dipping, and either air dried or baked. Available in white, gray, black, tile red, yellow, green, aluminum, and clear.

SOURCE — Plastics Lining Corp., Dept. CP, 914 South Wabash Ave., Chicago 5, Ill. . . . or for more information check CP 4255 on the handy form, pages 2 and 3.

★

"Surface Active Agents" is 381-Page Handbook

Applications and theoretical aspects of surface active agents are discussed in this comprehensive 381-page text. Includes 41 illustrations.

Covers relation between surface tension and other physical properties of matter; characteristics and effects of surface active agents; methods and apparatus for determining surface tension. There is a 37-page alphabetical list of wetting and other surface active agents, giving chemical composition, industrial use, name and address of manufacturer. Industrial applications are discussed.

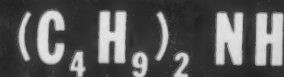
Authors: C. B. F. Young and K. W. Coons. Price, \$6. Remit direct to Chemical Publishing Company, Inc., Dept. CP, 26 Court St., Dept. 36, Brooklyn 2, N. Y. Or, when inquiring, specify CP 4256 on handy form, pages 2 and 3.

For more information on product at right, specify CP 4257 . . . see information request blank between pages 2-3.

DOUBLE CHECKED ✓ FROM RESEARCH TO INDUSTRY

SHARPLES

DIBUTYLAMINE



Dibutylamine undergoes reactions typical of secondary amines with aldehydes, ketones, oxides, phosgene, carbon disulfide, chlorohydrins, cyanates and thiocyanates.

Among its applications are its uses as an intermediate for:

- DYESTUFFS
- CORROSION INHIBITORS
- FLOTATION REAGENTS
- RUBBER VULCANIZATION ACCELERATORS

SPECIFICATIONS

Color	Water-white
Specific Gravity at 20°/20°C.	0.76
Acid Insolubles	Max. 0.16%
Dibutylamine Content	Min. 98%
Distillation:	
Initial boiling point	Min. 154°C.
Not less than 95%	Below 161°C.
Not less than 97%	Below 162.5°C.
Final boiling point	Max. 167°C.

OTHER PROPERTIES

Average Weight per gal.	6.33 lb.
Flash Point (open cup)	135°F.
Freezing point	< -50°C.
Surface Tension at 20°C.	24.7 dynes/cm.
Viscosity at 25°C.	0.89 centipoise

AVAILABILITY

Dibutylamine is available in drums and tank cars.

SHARPLES CHEMICALS INC.
PHILADELPHIA CHICAGO NEW YORK



*What's your
attitude?*

TOWARDS SOMETHING THAT'S REALLY NEW IN ADHESIVES? The reason we ask is this: Many amazing product improvements have resulted from applying new "RESYN" adhesives to packaging, converting and assembling operations previously thought to be at their highest level of efficiency.

"RESYN" adhesives provide higher resistance against all forms of moisture and temperature variations . . . adhere a wider variety of surfaces . . . offer a greater protection against vermin, mould, age . . . and add definite sales advantages to the finished product.

Successful "RESYN" adhesives are now used for: Carton making — Coffee bag making — Casket making — Labeling — Tube winding — Permanent identification of out-door packages — Wood working — Book making — Paper drape making.

If you're open minded about these really new "RESYN" adhesives, address 270 Madison Ave., New York 16, N. Y.

*Reg. Trade Mark

**National
ADHESIVES**

EVERY TYPE OF ADHESIVE FOR EVERY INDUSTRIAL USE

When inquiring check CP 4258 on handy form, pgs. 2-3



MICROCRYSTALLINE WAX

These high points in the Crown Quality Line are saving money for many wax users. If you are manufacturing any product involving the use of wax, investigate the PETROLITE-Crown Quality line now.

Petrolite Crown Quality Waxes are highly refined microcrystalline waxes. They are 100% petroleum derivatives, and are produced exclusively in the Petrolite refinery. In addition to the qualities noted above, Petrolite waxes have many other attractive features.

Prices, complete information and samples are available on request. Get all the information on Petrolite Waxes—the price advantage over vegetable waxes is substantial.

High Gloss
Low Oil Content
Chemical Inertness
Non Blocking
Excellent Electrical Properties
High Solvent Retention
Water and
Water Vapor Resistance
Wide Color Range

PETROLITE Crown Quality WAXES

Petrolite Corporation, Ltd. WAX DIVISION
30 Broad Street, New York 4
REFINERY: Box 390, Kilgore, Texas

When inquiring check CP 4259 on handy form, pgs. 2-3

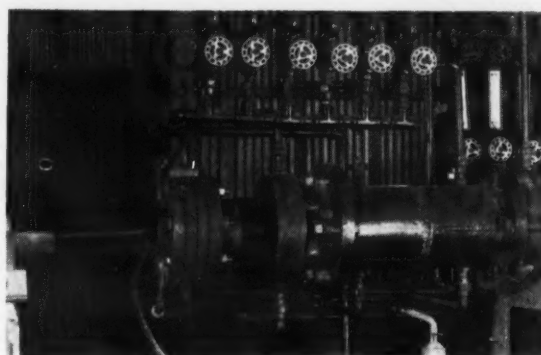
Materials

Corrosion Resistant Vinyl Tubes Bonded in Steel Pipe

Permits handling strong chemicals in durable pipe; flanges fully protected

USES — For handling of strong chemicals in chemical plants, pulp and paper mills, coal mines, refineries, etc.

FEATURES — Tube wall thickness of pipe lining inserts made of Vinyl resin with proper chemically resistant pigments and plasticizers is only 50-60 thousandths of an inch. The diameter is such that these extruded linings can be placed easily in the interior of standard

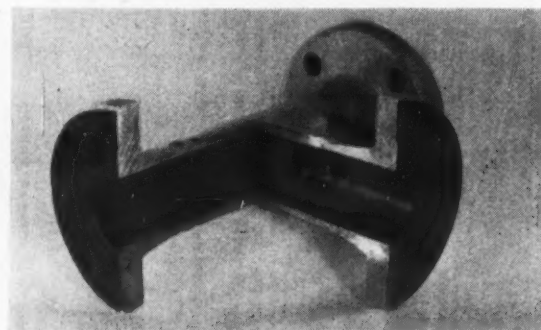


Plastic pipe lining emerges from extruder

steel pipe. Once placed in the steel pipe and intimately bonded to it the combination provides pipe with the chemical resistance of Vinyl plastic plus the strength and flexibility of steel. Protection of flange areas is also provided for.

DESCRIPTION — These Vinyl linings for the steel pipe are extruded in the form of a tube. Prior to the application to the pipe the plastic tubing is tested electrically for imperfections. Hydrochloric acid is placed inside and outside the tubing and a resistance reading is taken with an ohmmeter across the tube itself. Where there is no drop in resistance the tube is considered satisfactory.

When the plastic tube has been tested, it is coated with an adhesive and then placed in the steel pipe. Heat and pressure are applied and the plastic makes an intimate bond with the steel. Flange facing and gasketing material embody a different formulation of elastomer resins. This is molded against the flange face



Cut-away view of flanged gasket and lining

at the same time the pipe lining is molded around the edge of the flange. These two materials are then



Alkali- and Acid-Proof CEMENTS

Acid- and Alkali-proof brick and tile construction, whether for tank linings, floors or walls, is only as resistant to corrosion as the cement which holds it together. Choice of the right cement depends on the type of corrosion to be met as well as temperatures and permeability.

Proper installation depends somewhat on the ease of mixing, workability and setting properties of the cement. Through years of experience in building chemical equipment and installing linings for corrosive service, Knight has developed a line of cements to meet these exacting requirements.

- Knight No. 2 Cement — Silicate type
- Knight No. 6 Cement — Sulphur-Sand-Resin type
- Knight No. 7 Cement — Sulphur-Carbon-Resin type
- Knight No. 3 Resin Cement — Phenolic type
- Knight No. 4 Resin Cement — Modified Phenolic type
- Knight No. 8 Resin Cement — Phenolic type
- Knight No. 9 Resin Cement — Phenolic type
- PERMANITE Resin Cement — Furan type

For complete data on Knight Acid and Alkali-proof cements write—

MAURICE A. KNIGHT
403 Kelly Ave., Akron 6, Ohio

When inquiring check CP 4260 on handy form, pgs. 2-3

Materials

bonded together so that when two flanges are placed to face, the pipe liner material of one face is in contact with the pipe liner material of the other.

Results of various tests indicated a resistance which for practical purposes can be recorded as 10^6 ohms. The only standard for purpose of comparison is that of the Southern California Gas Co. It considered a conductance of 40.0 micro-ohms per square foot a failure.

Impartial tests of five months showed no increase in conductance of pipe handling 35% sulfuric acid, concentrated hydrochloric acid, 50% nitric acids, etc. and distilled water and acid mine water.

SOURCE — This pipe lining process is a development of American Pipe & Construction Co., (Amercoat Div.), Dept. CP, Los Angeles 54, Cal. . . . or for more information check CP 4261 on the handy form, pages 2 and 3.

★ Corrosion Resistant Alloy Very Efficient as Balance Weights

Combination of tungsten, copper, nickel

USES — Originally developed to meet demands for a material of high density for use on a gamma ray screen, it is adaptable to the construction of balance weights for elimination of vibration in crankshafts, modern air screws, centrifugal clutches and other rotating parts.

FEATURES — Combines great tensile strength with good machinability. Highly resistant to atmospheric salt water corrosion and easily plated with cadmium, chromium and nickel. It can be silver soldered and brazed by standard methods.

DESCRIPTIONS — This alloy — Hevimet — possesses a density 50 per cent greater than lead. A sintered material, Hevimet is made in a variety of non-porous sheets and blocks. Complex shapes may be built up from simple pressing by a special process of hydrogen welding. The average product has a density from 16.8 to 17 grams per cu. cm., a tensile strength of 85,000 to 118,000 lbs. per sq. inch and a Rockwell hardness of 30 to 40 "C" scale.

SOURCE — General Electric Co., (Chemical Dept.), Dept. CP, Pittsfield, Mass. . . . or for more information check CP 4262 on the handy form, pages 2 and 3.

★ Chlorinated Paraffin Useful in Vinyl Plastics and Chemical-Resistant Metal Finishes

Revised and new information on manufacturer's various types of chlorinated paraffin in flame-proof and weather-proof textile coatings is contained in a 20-page booklet. Literature includes results of tests of vinyl coatings and vinyl plastics containing this product and discusses its potential as a low cost plasticizer in pigmented vinyl coatings for cloth and metal.

Other applications mentioned include use as a moisture-proof coating for plywood; also, in combinations with Parlon chlorinated rubber as chemical-resistant finishes for metal. In one form, product appears to be effective barrier against moisture vapor transmission through plywood panels. General properties of the product, in its various forms, are discussed.

"Hercules Chlorinated Paraffin," issued by Hercules Powder Company, Dept. CP, Wilmington, Del. When inquiring, specify CP 4263 on handy form, pages 2 and 3.

MARCH, 1948

CELANESE* CP ACETONE

Celanese CP Acetone is being produced in tank car or drum quantities to meet industrial requirements. This high quality ketone is being supplied in accordance with the following specifications:

Acetone Content	99.5% min.
Sp. Gr., 20/20°C.	0.7915—0.7930
Distillation Range	1°C. incl. 56.1°C.
Color	5 APHA max.
Acid as Acetic002% max.
Alkalinity as NH_31 ppm max.
Non-Volatile	Max. .001 gr. per 100 cc sample
Permanganate Time	2 hours min.
Aldehydes	None
Water	Less than 0.5% (miscible with 19 vol. 60° Be' gasoline at 20° C.)

A new brochure is available containing specifications and general information on many of the Celanese* organic chemicals. Write for your copy—and call on Celanese whenever you need technical assistance regarding organics.

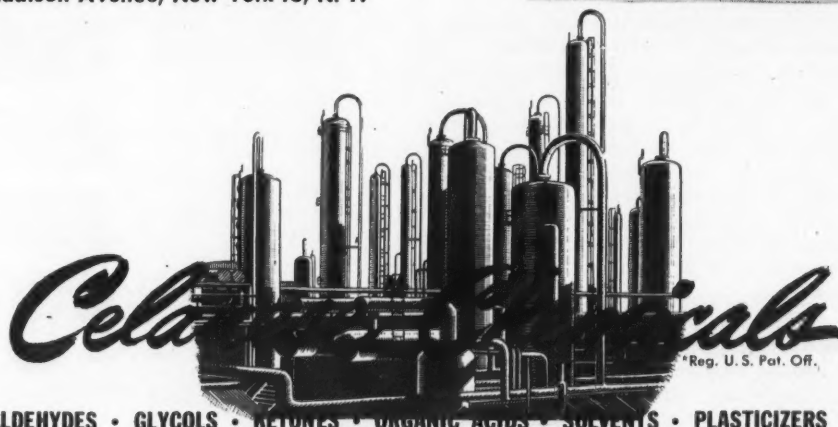
CELANESE CORPORATION OF AMERICA
Chemical Division
180 Madison Avenue, New York 16, N. Y.

CELANESE* ORGANIC CHEMICALS NOW IN PRODUCTION:

Formaldehyde	n-Propyl Alcohol
Acetaldehyde	iso-Propyl Alcohol
Acetic Acid	Butyl Alcohols
Methanol	Methylal
Acetone	Tricresyl Phosphates
Special Solvents	

FOR LABORATORY EVALUATION, SCHEDULED FOR FUTURE PRODUCTION:

Methyl Pentanediol	Propionaldehyde
Tetrahydrofuran	



ALCOHOLS • ALDEHYDES • GLYCOLS • KETONES • ORGANIC ACIDS • SOLVENTS • PLASTICIZERS • INTERMEDIATES

When inquiring check CP 4264 on handy form, pgs. 2-3

2-Vinylpyridine Plays Vital Part in New Synthetic Elastomers

Pyridine analog of styrene also useful in pharmaceuticals, insecticides

USES — Offers interesting possibilities in the development of synthetic elastomers. Copolymerizes similarly with butadiene and styrene, and with butadiene and styrene together, to form a synthetic elastomer, which is said to have very interesting properties.

In addition to its use in the production of plastics and elastomers, 2-Vinylpyridine has applications in the manufacture of pharmaceuticals, insecticides and fungicides.

FEATURES — The vinylpyridine-butadiene copolymer has a low heat build-up and a high tear resistance. The rebound value of vinylpyridine-butadiene rubber is about the same cold as it is hot. The vinyl pyridine-butadiene latex possesses a remarkable ability to wet fibers.

DESCRIPTION — The material boils at 159 degrees C. (760 mm) and can be distilled at about 98 degrees C. at 100 mm. It is soluble to the extent of about 2.5% in water and is readily emulsified with water, about 15% of the water dissolving in it.

2-Vinylpyridine polymerizes at room temperature to give tough, clear resins which are soluble in dilute acid.

SOURCE — Research division of Reilly Tar & Chemical Corp., Dept. CP, Indianapolis, 4, Ind. . . . or for more information check CP 4265 on the handy form, pages 2 and 3.

★

Methyl Silicon Chlorides Feature Inertness, Thermal Stability

Present uses based on ability to produce condensation products of unusual interest

USES — Present uses are based on the ability of methyl silicon chlorides to condense to polymeric structures having alternate silicon and oxygen atoms, upon hydrolysis with water. The resulting condensation products have been developed along most interesting lines.

To date there have been produced from these materials non-inflammable heat-stable rubber, high temperature transparent resins, electrical insulating varnishes and coatings, lubricating and vacuum pump oils, hydraulic fluids, high and low temperature greases, valve lubricants, stop cock and high vacuum greases, anti-foam agents. Besides these, some of the methylchlorosilanes are now important as direct reagents for imparting water repellent films to many surfaces.

FEATURES — The principal properties which characterize the above materials as superior to others in the field are chemical inertness, high thermal stability, low dielectric losses, and in fluids and oils, a wide liquid range. These products are examples of compounds resulting from a single synthesis in which the methylchlorosilanes were used as the intermediate material. Other feasible reactions are being uncovered daily and the products are awaiting development.

DESCRIPTION — The organo-silicons are perhaps the most important single new group of synthetic chemicals

ATLANTIC

PETROLEUM CHEMICALS

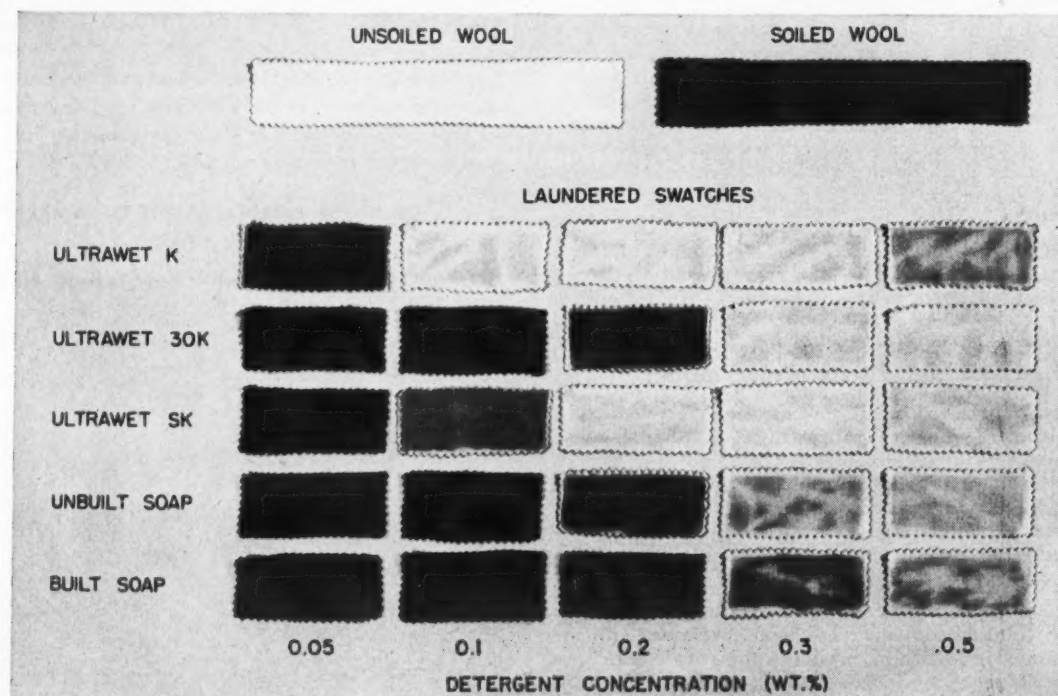
ULTRAWET K's

Atlantic's new K series Ultrawets are among the finest alkyl aryl surface-active agents yet offered. Their superior wetting, sudsing and detergent properties recommend them for better soaps, cleaning compounds, cosmetics and many industrial processes.

Ultrawet K's are available now in quantity for immediate delivery in liquid, flake or bead form. As a liquid, they are pale amber in color, odorless (no kerosene or sludge odor) and uniform. In flake and bead form they are the detergent compounder's ideal product from the standpoint of whiteness and lack of color.

The new Ultrawet K's are the product of 10 years' research by Atlantic, for over three-quarters of a century a leading maker of quality petroleum products. The outstanding properties of the K series are indicated by the following data:

	Ultrawet K Flakes	Ultrawet 30K Liquid	Ultrawet SK Beads
Physical Form:			
Wt. % Active Sulfonate—min.	85	25.5	35
pH—1% Solution:	7-8	7-8	7-8



Picture shows superior wool detergency of Ultrawet K's over built and unbuilt soaps. Wool swatches impregnated with a synthetic soil are washed in a standard laundrometer. The

wash solution consists of stated concentrations of detergents and water with a hardness of 100 p.p.m. Tests are conducted for 20 minutes at 105° F. and followed by 2 rinses.

Surface Tension:

	Ultrawet K	Ultrawet 30K	Ultrawet SK
Concentration @ .001 wt. %	48.0 dynes/cm.	64.4 dynes/cm.	58.8 dynes/cm.
@ .005 wt. %	34.8 "	41.1 "	42.0 "
@ .01 wt. %	29.0 "	33.4 "	32.9 "
@ .05 wt. %	27.3 "	28.2 "	27.9 "
@ .10 wt. %	26.7 "	27.4 "	27.1 "
@ .50 wt. %	27.0 "	26.9 "	26.8 "

Draves Wetting Times Test:

Concentration @ .05 wt. %	35 sec.	—	300 sec.
@ .10 wt. %	8.2 "	265 sec.	35 "
@ .20 wt. %	4.0 "	21 "	11.6 "
@ .50 wt. %	2.6 "	5.8 "	4.4 "

Ross-Miles Foam Test:

Concentration @ .05 wt. %	116 mm.	89 mm.	98 mm.
@ .10 wt. %	132 "	105 "	121 "
@ .20 wt. %	148 "	127 "	136 "
@ .50 wt. %	161 "	142 "	154 "

(Note: Surface Tension, Draves Wetting Test and Ross-Miles Foam Test are conducted at 75° F. and Ultrawet K's solutions were made up using water with a hardness of 100 p.p.m. Draves Wetting Test run with 1.5 g. hook.)

For samples, further information and quotations, contact

THE ATLANTIC REFINING COMPANY

Chemical Products Division

260 SOUTH BROAD STREET, PHILADELPHIA 1, PA.
CHAMBER OF COMMERCE BLDG., PITTSBURGH, PA.
HOSPITAL TRUST BLDG., PROVIDENCE 1, R. I.

When inquiring check CP 4266 on handy form, pgs. 2-3

MARCH, 1948

Materials

initiated and given impetus by military demands during the war years. Of the limitless possibilities of organo-silicon compounds, the methylchlorosilanes were identified as those "most likely to succeed" and they have lived up to expectations. Three methyl silicon chlorides are now available: Methyltrichlorosilane CH_3SiCl_3 ; Dimethyldichlorosilane $(\text{CH}_3)_2\text{SiCl}_2$, and Trimethylchlorosilane $(\text{CH}_3)_3\text{SiCl}$.

These are all mobile, colorless, slightly fuming liquids with boiling points ranging from 57 to 70 degrees C. They are all soluble in the common hydrocarbon solvents and have the following specific physical properties:

	CH_3SiCl_3	$(\text{CH}_3)_2\text{SiCl}_2$	$(\text{CH}_3)_3\text{SiCl}$
Molecular Weight	149.48	129.06	108.64
Liquid Density (20° C.)	1.271	1.062	0.846
Melting Point	-90° C.	-86° C.	-40° C.
Boiling Point	66° C.	70° C.	57.6° C.

Their reactive halogen linkages allow for their easy conversion into silicols, alaxysilanes, or siloxane polymers, which retain the organo-silicon grouping of the halide. Besides these, their reactions are similar to those of the common organic halides.

SOURCE — Product of Anderson Laboratories Inc., Dept. CP, 1415 E. Maumee St., Adrian, Mich. . . or for more information check CP 4267 on handy form, pages 2 and 3.

Temporary Spray Coatings Are Non-inflammable, Non-Toxic

Film thickness of .003" protects surface while permitting machining; easily removed

USES — As a temporary protective coating for use on stainless steel, aluminum and painted surfaces.

FEATURES — Differs from usual type of temporary coating compounds in that its compounds are water dispersions of film forming materials; these do not contain volatile solvents and accordingly are free from any fire hazard, and any toxic condition in spraying.

DESCRIPTION — The material is shipped as a liquid, adjusted before shipping for best spraying conditions. The compounds contain about 3.6 to 3.8 of dry solids or film forming materials per gallon. The coverage obtained depends upon the thickness of the protective coating applied.

For withstanding all abuse received in the average plant, a film thickness of .003 inches plus has proven satisfactory. This thickness of coating can be deposited with one application to obtain a coverage of 200 square feet per gallon, under average spraying conditions.

The character of the film when dry is a tough, abrasive resistant, elastic, protective coating, adhering to the surface strongly, permitting all machining operations to be performed such as drawing, drilling, bending, etc., yet the film can be removed by a steady pull when desired.

SOURCE — This material, named Spraylat, is produced by Spraylat Corp., Dept. CP, 1 Park Ave., New York 16, N. Y. . . . or for more information check CP 4268 on the handy form, pages 2 and 3.

For oxygen free atmospheres use Airco Nitrogen

The use of Airco Nitrogen for deaerating, processing, storing and packaging fats and oils and in the packaging of dehydrated foods gives positive protection against oxidation. It provides an inert atmosphere, free of impurities, that protects practically any material susceptible to oxidation and corrosion by air.

To meet your requirements, Airco can supply nitrogen of specific types. The uniformity and adherence to specifications of Airco Nitrogen are definite factors contributing to its satisfactory use.

Airco Nitrogen is distributed through these offices, strategically located throughout the country to supply your needs quickly.

Atlanta, Georgia
Baltimore, Maryland
Bettendorf, Iowa
Birmingham, Alabama
Boston, Massachusetts
Buffalo, New York
Charlotte, North Carolina
Chicago, Illinois
Cincinnati, Ohio
Cleveland, Ohio
Dayton, Ohio
Detroit, Michigan

In Texas: Magnolia Airco Gas Products Company, El Paso, Fort Worth, Houston.
On West Coast: Air Reduction Pacific Company, San Francisco, Emeryville and Los Angeles, California; Portland, Oregon; Seattle, Washington.

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When inquiring check CP 4269 on handy form, pgs. 2-3

CHEMICAL

**KESSCO
PRODUCTS**

SPECIALTIES

PLASTICIZERS

Cellulose, Vinyls, Rubber, Resins

SOFTENERS

Leather, Rubber, Textile, Paper

EMULSIFIERS

Cosmetics, Foods, Pharmaceuticals,
Petroleum, Agriculture Insecticides

KESSLER CHEMICAL CO., INC.

ESTABLISHED 1921

STATE ROAD and COTTMAN AVE.

PHILADELPHIA 35, PA.

When inquiring check CP 4270 on handy form, pgs. 2-3

Materials

Lubricant Stops Sticking In Compounding GR-S Stocks

*Used with magnesium oxide, also acts as
accelerator activator in GR-S*

USES — For rubber compounding, especially GR-S stocks heavily loaded with filler.

FEATURES — Useful where sticking is a problem. In a number of cases an improvement of stearic acid on a cost-performance basis.

DESCRIPTION — Soft, waxy amide. M. P. — 63-65 degrees C. Water dispersible and soluble in most organic solvents.

SOURCE — Nopco Lubricant CFI is made by Nopco Chemical Co., Inc., Dept. CP, Harrison, N. J. . . . or, for more information check CP 4271 on the handy form, pages 2 and 3.

★

3 Types of GR-S: Stainless; Easy to Process; Absorb Less Water

*Speed production, improve insulation,
increase quality*

USES — The recent improvements in synthetic rubber, as achieved in the developments described here, embody three types. The first is a new non-staining type of GR-S which has the advantage of an age resistor containing no ingredients that discolor rubber on exposure to light, and which does not stain either the rubber itself or surfaces with which it comes in contact. This rubber may be used in lamp cords, refrigerator door strips, sidewall tires, auto window sealing strips.

The second is a type of GR-S which absorbs 65% less water than the regular type. Salt is unnecessary in the coagulating process used in producing this rubber. This is an advantage in its application in wire insulating compounds.

The third type features easier processing, and while it cannot be used alone for products which require durability in combination with regular GR-S, processing qualities are enhanced. For example, production of rubber covered wire is speeded up, surface finish of boots is improved, and better molding in forming tire sidewalls is achieved with reduction in tearing.

FEATURES — The age resistor used in the first of these rubbers is a cresylic acid type. Some non-staining age resistors previously used have presented a phenolic odor problem. This resistor is believed the first which eliminates this difficulty.

In the second type, salt is unnecessary in the coagulating process. Although where salt is used it is usually thoroughly washed out of the rubber, even a trace tends to absorb moisture from the atmosphere. This is avoided with this new type.

The third type mills, mixes and extrudes fully as smoothly as natural rubber.

DESCRIPTION — Type one of the new GR-S is made in the same manner as regular GR-S, except the cresylic age resistor replaces the customary amine type.

In producing the second type it was found that salt is not necessary in the coagulating process and could

CHEMICAL PROCESSING Preview

Materials

be eliminated, except that when GR-S was coagulated with acid alone, the particles of rubber tended to stick together in large chunks. These could not be readily washed and dried. However, the addition of small amounts of glue during coagulation eliminated the agglomerating tendency. In other words, glue is used in this instance for the opposite of its normal function: to prevent sticking rather than to cause sticking.

The third type (for improved processing) is made in the same manner as normally, except that a new ingredient — $\frac{1}{2}$ of 1% of cross linking agent — is used. It is not used alone since its gain in processing properties is made at a sacrifice in abrasion resistance, tensile strength, etc.

It is conceivable that two or more of these improvements could be combined in one single GR-S rubber. Already a type has been produced combining the improved processing with the non-staining age resistor. So far as is known, other combinations have not been tried.

SOURCE — These improved types of GR-S rubber have just recently been announced by the United States Rubber Co., Dept. CP, Rockefeller Center, New York, N. Y. . . . or for more information check CP 4272 on the handy form, pages 2 and 3.

★

Neoprene Paint Dries Quickly, Adheres Well to Wood, Metal, etc.

*Protects surfaces exposed to fats, oils and
corrosive liquids*

USES — As a coating for the protection of surfaces which are subjected to exposure to fats, oils, greases or corrosive chemical liquids, solids, or fumes.

FEATURES — Excellent adhesion to wood, metal and other smooth surfaces. Film loses tack in 20-30 minutes at room temperature and dries completely in several hours, requiring no oxidation period. Odor (film) none. No special treatment of surface to be painted is necessary.

DESCRIPTION — A solution of Neoprene in an aromatic solvent with the addition of other materials to yield a chemically resistant paint. Paint surface should be free from dirt, grease, rust and other foreign matter prior to coating. Miscible solvents: thinners-aromatics, ketones, esters, chlorinated hydrocarbons, mineral spirits, turpentine.

SOURCE — Protection of surfaces with this type of coating is the development of Union Bay State Chemical Co., Dept. CP, 50 Harvard St., Cambridge, Mass. . . . or for more information check CP 4273 on the handy form, pages 2 and 3.

★

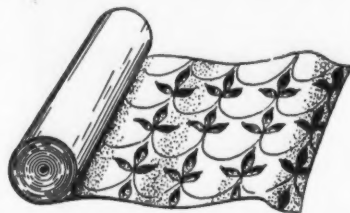
Gives Technical Data on Protective Coatings for 10 Major Industries

12-page catalogs for 10 major industries present full technical information concerning protective coatings. Information includes detailed chemical and physical properties, application instructions, other pertinent data.

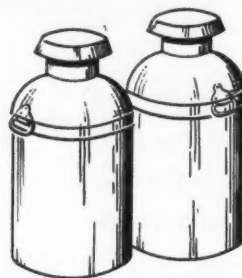
Issued by American Pipe and Construction Company, Amercoat Division, Dept. CP, P. O. Box 3428, Terminal Annex, Los Angeles 54, Calif. When inquiring, specify CP 4274 on handy form, pages 2 and 3.

MARCH, 1948

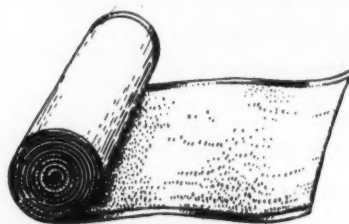
If it helps dye silk



protect milk



wash rugs



and kill bugs



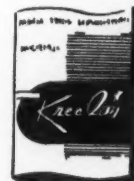
what can it do for you?

“VERSATILE” is the word for Wyandotte Kreelon, the new synthetic organic detergent. A surface-active agent with excellent wetting, sudsing and cleansing properties, it has countless applications in the manufacture of cleaning and washing compounds, textiles, insecticides and leather. Its uses extend to the Metal Finishing, Paper, Food Processing and many other industries.

Kreelon reduces the surface tension of water and aqueous solutions effectively. It peptizes, disperses, penetrates, emulsifies and cleanses as it wets. Because it retains these properties in acid, neutral or alkaline solutions — and in hard or soft waters — it may be used to advantage either alone or in solutions and dry mixes with a great number of other chemicals.

Wyandotte Kreelon is economically priced for quantity or small lot consumption.

• Write for your free copy of the new 28-page booklet describing the properties and suggested uses of Wyandotte Kreelon.



WYANDOTTE CHEMICALS CORPORATION
WYANDOTTE, MICHIGAN • OFFICES IN PRINCIPAL CITIES

Soda Ash • Caustic Soda • Bicarbonate of Soda • Calcium Carbonate • Calcium Chloride • Chlorine • Hydrogen • Dry Ice • Glycols
Ethylene Dichloride • Propylene Dichloride • Chloroethers • Aromatic Sulfonic Acid Derivatives • Other Organic and Inorganic Chemicals



When inquiring check CP 4275 on handy form, pgs. 2-3

Procaine Penicillin G Crystalline—Pfizer

THE LATEST DEVELOPMENT IN
PENICILLIN THERAPY



This new Penicillin Salt—a product of Pfizer research—will soon be available to the pharmaceutical industry. Procaine Penicillin G Crystalline—Pfizer will be supplied in bulk as the dry, crystalline, sterile salt, and also as its sterile suspension in oil packaged in 10 cc bottles containing 300,000 units per cc.

Extensive clinical investigations have demonstrated that administration by intramuscular injection of 1 cc of an oil suspension containing 300,000 units of Procaine Penicillin G Crystalline—Pfizer results in therapeutic blood levels for a period greatly in excess of that hitherto obtained with other dosage forms.

By the development of this new salt, and its suspension in oil, Pfizer has made a further contribution to Penicillin therapy, and one which will substantially extend the usefulness of this important therapeutic agent. Chas. Pfizer & Co., Inc., 81 Maiden Lane, New York 7, N. Y.

PFIZER

Manufacturing Chemists Since 1849

When inquiring check CP 4276 on handy form, pgs. 2-3

Materials

Reveal Toxicity Results of N-substituted Benzamide Tests on Various Insects

11-page data sheet presents review of laboratory tests on the toxicity of N-substituted benzamides to various insects. Compounds listed were prepared by reaction of benzoyl chloride with an amine or amino compound. In this class are included all compounds containing 1 or 2 benzoyl groups.

Publication E-732, issued by US Dept. of Agriculture, Agricultural Research Administration, Bureau of Entomology and Plant Quarantine, Dept. CP, Washington, D. C.

★

Surface Agent Lather Stability, Quantity Good to 15% Concentration

Useful in textile, metal, paper industries

USES — Wide application in many fields: Textile uses include scouring, washing, dyeing, bleaching, etc. Metal Cleaning: emulsion scouring, alkaline cleaning, electrolytic cleaning. Leather: fat-liquoring, dyeing, wetting-back. Paper: resin emulsification, de-inking, pigment dispersing. Also in fire extinguishers, non-metallic flotation and general cleaning.

FEATURES — Less than 0.1% of surface active agent HHS gives excellent lowering of surface and interfacial tension at 25 degree C., indicating good emulsifying and dispersing properties.

The height of lather obtained at 25 degrees C. using the Ross & Miles foam test with distilled water is more than 180 mm. at 0.4% HHS concentration. The quantity of lather, as well as lather stability, are good down to concentrations of about 0.15% surface active agent. Of particular advantage is the ability of this agent to give 75% of this value even in water of 300 ppm hardness.

DESCRIPTION — First of a series of new surface active agents. The pH of a 1% solution is approximately neutral, varying only from 6.5 to 7.5. Both as a solid and in solution it is colorless to a light straw in color. HHS is stable in sulfuric acid to concentrations above 10%.

Although salted out, HHS is stable in 25% caustic solutions, both at room temperature and at the boiling temperature.

Stability toward metallic ions is shown in the table. The figures represent milliliters of 1% solution of the metal salt required to cause turbidity in 10 milliliters of 1% solution of the surface active agent.

	Ca	Mg	Cu	Al	Ba	Fe	Pb	Zn	Ni
25° C.	10	17	36	1	1	26	3	25	20
100° C.	26	42	100	2	1	51	3	86	38

At 24° C., surface active agent HHS is soluble in excess of 1% in 1% aqueous caustic soda, while 2% caustic dissolves about 0.25% HHS. At 80° C., the solubility is increased about four times.

Effective concentrations of surface active agents are obtained even in the presence of moderately strong caustic.

The wetting speed is not significantly changed by the presence of acid or alkali. The wetting speed is somewhat improved by the presence of mineral acids. In the

CHEMICAL PROCESSING Preview

Materials

presence of 2% caustic solutions, the optimum wetting time (25 seconds) is obtained at a concentration of 0.15% HHS and increasing this concentration does not materially improve this wetting time.

SOURCE — Data on this product and its wide adaptability as an anionic surface active agent from Publicker Industries, Inc., Dept. CP, 1429 Walnut St., Philadelphia 2, Pa. . . . or for more information check CP 4277 on handy form, pages 2 and 3.

★

Resin Adheres Well to Natural and Synthetic Fibers

For weaving, knitting yarns, also sizing, coating paper and as modifier

USES — Of interest for textile sizing. This resin may be used as the chief sizing ingredient or as modifying additive for other substances, such as "Elvanol", sodium carboxymethyl cellulose, "Carbowax" compound 1500, gelatin and starch. The resin should find application also in the sizing and coating of paper, as modifying agent for starch and gelatin adhesives, and as a blending agent for aqueous solutions of gums and resins.

FEATURES — High water solubility, low viscosity, excellent adhesion to both natural and synthetic fibers. Recent tests of Dimethyl Hydantoin-Formaldehyde Resin (DMHF) have shown that its use, in conjunction with other materials in single end sizing and warp slashing of nylon gives improved results in the knitting and weaving of this important synthetic fiber.

DESCRIPTION — Available in development and research quantities. Dissolves readily in cold and hot water. Solutions are of low viscosity, even at high solids content. DMHF is nearly colorless and is nearly odorless or has a faint caramel-like odor. It comes in a brittle lump form. It absorbs 4-5% moisture in three hours when powdered and exposed to air at 25 degrees C. and 96% relative humidity. It is under these conditions that the resin forms transparent brittle lumps.

Compatibilities — In aqueous solution it is compatible in all proportions with starch, gelatin (glue), canary yellow dextrin, sodium starch glycolate expotato and "Elvanol" polyvinyl alcohols 51-05, 52-22 and 71-24. In methanol solution it is compatible in all proportions with "Elvacet" polyvinyl acetate 10-17.

In films it is compatible with "Elvanol" 51-05 and 52-52 and "Elvacet" 10-17. Compatible in limited proportions with casein. Mixtures of DMHF and casein containing 10-30 and 70-90 parts DMHF per 100 parts total solids are compatible.

The heat sealing temperature of polyvinyl acetate is not appreciably affected by addition of up to an equal weight of DMHF.

Coatings deposited from "Elvacet" emulsion containing 10-20% DMHF based on total solids in the mixture show no discernable difference in water sensitivity from unmodified emulsions coatings. A composition containing equal parts of "Elvacet" emulsion solids and DMHF gives films less hazy than those from plain emulsions and with less tendency to redisperse under water.

SOURCE — DMHF is the product of E. I. du Pont de Nemours & Co. (Electrochemicals Dept.), Dept. CP, Wilmington, Del. . . . or for more information check CP 4278 on the handy form, pages 2 and 3.

Hooker Combines Chlorine and Benzene to give you many useful CHLORBENZENES

HOOKER Chlorbenzenes and their derivatives find a wide variety of uses in many process industries. Our many years' experience in manufacturing these compounds assures you of uniform high quality of products and dependable

service.

Listed below are some of these Chlorbenzenes. Technical Data Sheets on each and samples are available when requested on your business letterhead.

PRODUCT	DESCRIPTION	SUGGESTED USES
(Chemical Formula Molecular Weight) Monochlorobenzene C_6H_5Cl ; 112.5	Clear, colorless, moderately volatile liquid, with a characteristic mild odor.	Intermediate in manufacture of insecticides, dyestuffs, drugs, perfumes, and other organic chemicals; solvent; heat transfer medium.
Paradichlorobenzene $C_6H_4Cl_2$; 147	White to clear, transparent crystals with a pleasant aromatic odor.	Insecticide; in the manufacture of sanitary specialties.
Orthodichlorobenzene, Tech. $C_6H_4Cl_2$; 147	Clear, colorless liquid with a characteristic odor. Completely miscible with most organic solvents; immiscible with water.	Solvent; insecticide; chemical intermediate in manufacture of dyestuffs and other organic chemicals; heat transfer medium.
Trichlorobenzene—1,2,4, Tech. $C_6H_3Cl_3$; 181.5	Clear, almost colorless mobile liquid having a characteristic chlorobenzene odor.	Insecticide; solvent; heat transfer medium; manufacture of dye intermediates and other organic chemicals.
Hexachlorobenzene C_6Cl_6 ; 284.7	White to cream colored crystalline powder. Somewhat soluble in most organic solvents; insoluble in water.	In the manufacture of flares, electrical insulating compositions, waterproof and fire-proof impregnation of paper; in wire drawing compounds.
Chloranisidine $ClC_6H_4(OCH_3)NH_2$; 157.5	Gray crystalline solid. Soluble in most organic solvents; insoluble in water.	Intermediate in the manufacture of dyestuffs such as red fast bases.
2,5-Dichloroaniline $Cl_2C_6H_3NH_2$; 162.0	Brown, crystalline solid; packaged as coarse crystals. Very slightly soluble in water; soluble in alcohol, benzene and ether.	Chemical intermediate in manufacture of dyestuffs.

HOOKEE ELECTROCHEMICAL COMPANY

15 FORTY-SEVENTH ST., NIAGARA FALLS, N. Y.
New York, N. Y. Wilmington, Calif. Tacoma, Wash.

HOOKEE CHEMICALS

Caustic Soda

Chlorine

Muriatic Acid

Sodium Sulfide

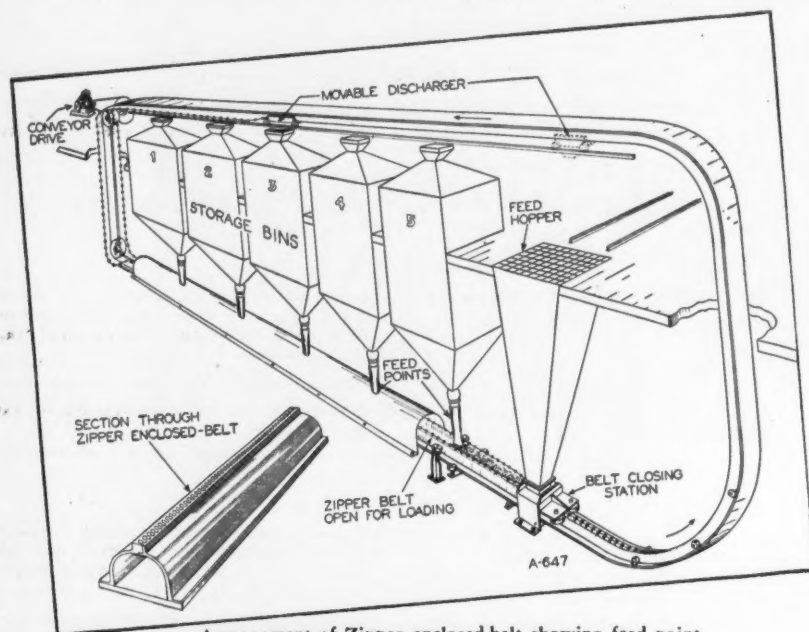
Sodium Sulphhydrate

When inquiring check CP 4279 on handy form, pgs. 2-3

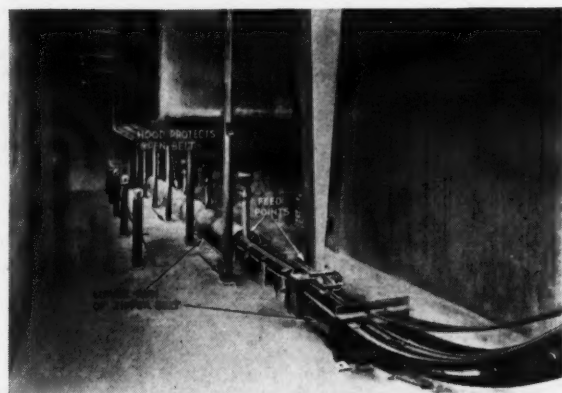
"Zipper" Enclosed-Belt Conveys Dry, Bulk Materials Without Breakage or Dusting

Material Handling

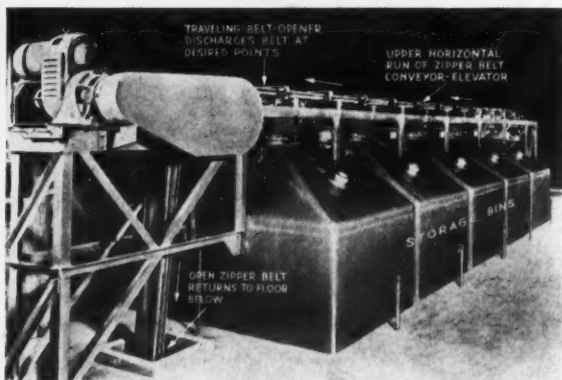
Conveys and elevates in any direction, in a solid mass, entirely enclosed within the belt



Arrangement of Zipper enclosed-belt showing feed point, closing station, discharger and opener



Feeding and closing stations of Zipper enclosed-belt handling unfired ceramic pellets



Discharging and opening stations of Zipper enclosed-belt handling unfired ceramic pellets

PROBLEM — In the conveying of unfired ceramic pellets, in a large ceramic plant, considerable breakage was caused by shifting of the material on the belt. Since uniformly sized pellets were required, breakage had to be eliminated.

SOLUTION — A "Zipper" enclosed-belt, continuous conveyor-elevator, suitable for the handling of bulk, dry materials was installed. Equipment handles any granular, flaky, pulverized or small lump materials.

Material is conveyed and elevated in any direction, in a solid mass, entirely enclosed within the belt. The rubber zipper belt will carry its load from feed to discharge within a casing sealed by interlocking zipper teeth or fingers and guided through various twists and turns by ball bearing guide rollers. No flights or scrapers for moving material through casings are employed.

"Zipped-up" belt is opened by rollers during discharge of material and the hinged side walls of the casing are spread out flat for passage over pulleys. In this manner the belt is driven over a head pulley much the same as an ordinary belt conveyor.

Opening of the belt is accomplished by means of rollers, which gradually curve the side wall belts apart. Belt closure is accomplished by another arrangement of rollers, which guide the side belts together and the fingers or teeth into engagement. Feed and discharge points may be made movable allowing flexibility of arrangement.

Installation data points out that the radius of a curve such as exists in the closed belt carrying run from horizontal to vertical must not be less than 6' 0" for the 4" Zipper unit. Length of straight run of belt required for a twist of 180° of the loaded belt is 16' 0", while a 90° twist requires 8' 0" of straight belt run. If a curve is to follow a feed point, the start of the curve must be at least 1' 6" from the nearest edge of the feed opening.

The belt, when opened into flat position, will move around bends on 20" dia. pulleys. Either side of the belt can be against the pulley rim. Belt is driven by means of one of the bend pulleys, usually located immediately beyond the discharge. Also, one of the pulleys must act as a takeup.

Loaded 4" zipper belt carries .07 cubic feet of material per foot of belt travel. Capacities may be figured for belts traveling at speeds of from 1 to 200 fpm.

Discharge can be made at only one point at a time and must be discharged completely at that point. A movable discharger, however, will give the effect of multiple discharge points.

RESULTS — Minimum breakage of fragile unfired ceramic pellets; almost no wear in handling this abrasive material; and, since material is entirely enclosed, contamination is eliminated. Material can be discharged completely at the discharge point as there are no pockets in which it can collect. Compact construction requires little head room, carrying and return runs pass through floors without supports or guides, ordinarily. Material is conveyed and elevated in any direction and is entirely enclosed within the belt.

SOURCE — Application of the material handling equipment was made by Stephens-Adamson Mfg. Co., Dept. CP, Aurora, Ill., and Zipper enclosed belt is made for this company by The B. F. Goodrich Co. . . or for more information check CP 4280 on the handy form, pages 2 and 3.

Loads 100, 200-lb. Bags, Cases, Cartons into Box Cars

Motorized unit permits hand-stacking of ten 100-lb. bags per minute

USES — Box car loader for loading 100 and 200-lb. bags, boxes, cartons, bundles into box cars. Handles bagged sugar, feed, starch, chemicals, Fuller's earth.

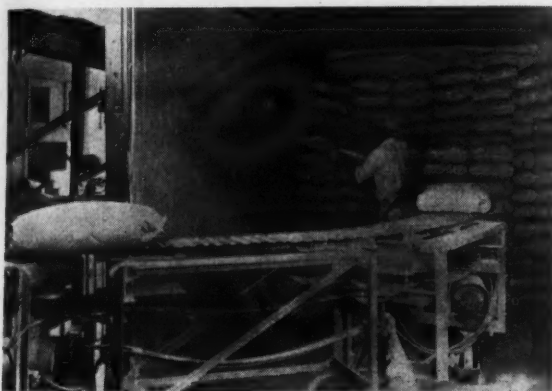
FEATURES — Loads car completely, without stopping operations between time of entering and leaving car.

When men are rotated, 1 can handle ten 100-lb bags per min., stacking them not more than 6 high. Where loaded 8 or 10 high, 2 men are needed, and manufacturer reports that 1 man can handle six 140-lb. bags per min.

Can be operated with or without either permanent or removable guide track. Reduces labor, paying for itself "in less than one year."

DESCRIPTION — Unit consists of five 5' sections for single-car loading, or seven 5' sections for loading on 2 tracks. Conveyor top is 3' 8" or 4' 8", depending on height to which bags are piled. Both are furnished with elevating conveyor, adjustable to shoulder height. For cement, limestone or other small 100-lb. bags which are not piled over 4' 6" high, machine is furnished with deck at discharge end, rather than an elevating conveyor.

Conveyor speed, 78 fpm. Loader moves in and out of cars at 60 fpm. In operation, loader moves into car with load. Conveyor is not started until machine is in position at end of car. When end of car is filled, conveyor is stopped and loader is run into opposite end of car without stopping operation. This is repeated when center of car is ready for loading.



14" type "V-3" box car loader in operation at Floridin Company, Quincy, Fla.

In case loader is to operate at another doorway, only the far half of the car center is filled by the loader, and while the near half of the car center is being filled from the chute the loader is moved to position in next car, thus losing no time for transfer.

If building floor is level with ground, a car or platform is furnished of same height as average car floor. In off-position two 1½ x 2 x 3/16" angles are spaced 47/8" on building floor. These guide machine into any desired location, preferably parallel with wall.

Guide track can also be made with loose sections to be lifted from doorway, or a low car can be used which moves from one end of dock to the other, entirely eliminating the loader truck. A switch is provided opposite each car door in case a fixed track is installed on platform. Loader's power is usually supplied by cable, preferably with take-up reel.

Within the car, loader is kept in alignment by a ½" diam., spring steel rod running full length of machine and aligning wheels of carriage. Operator merely steers front end in or out of car and the rest of the machine runs in and out on gangplank without further attention. Optional accessories include: (1) bag counter mounted on elevating conveyor, (2) power raising of elevating conveyor, and (3) signal bell which rings while machine is being moved. Installation diagrams, engineering data and a 16 mm film showing the "V-3" loading 140-lb. sugar bags, are available.

SOURCE — Developed by Manierre Engineering & Machinery Company, Dept. CP, Colby-Abbot Bldg., Milwaukee 2, Wis. . . . or for more information check CP 4281 on handy form, pages 2 and 3.

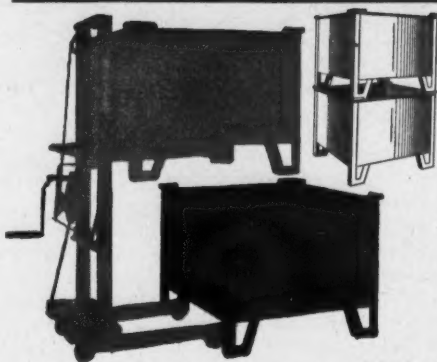
MARCH, 1948

MATERIALS HANDLING EQUIPMENT

BARREL TRUCK

It Loads Automatically

Handles barrels up to 1000 lbs. To load, shove truck up against barrel or drum, drop the sliding steel catch down over the rim—pull truck handles toward you and it will load automatically. Durable, all-steel, welded construction—built for rough usage. Greatest width at any point is only 22", permitting easy passage through narrow doors and aisles.



All-Steel STORAGE BIN Item 1024
(Stacking Type) \$31¹⁵

Excellent for storing small parts in limited floor space. Four-way entrance for use with hand, power lift, or fork truck. Can be built with crane lugs. Stacks easily.

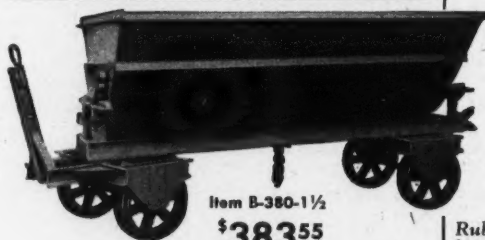


Item B-465-B
Automatic Dump Box
\$79.00

Item B-465-Y
Dump Box Yoke
\$50.00

Automatic DUMP BOX

Designed for handling all types of materials. May be used with hand, power truck, or overhead hoist. Gravity latch locks box in upright position until ready for dumping—pull on latch releases the box—dumping is automatic.



Item B-380-1½
\$383⁵⁵

Side Dump TRAILER TRUCK

Used for hauling scrap, metal, gravel, rubbish. Equipped with gear type rockers that provide smooth-action dumping. Automatic coupler at rear. Dumping is controlled from either side, whichever is desired.

When Ordering Always give "Item" number; this will help prevent error. All prices are f.o.b. Detroit. Prices subject to change without notice.

22-1



Item S-911-M

Equipped with 10" roller bearing, mounted metal wheels. \$33⁵⁰

Item S-911-P

Equipped with 12x4.00-6 4 ply pneumatic tires and tubes. \$45⁰⁰

Item S-911-R

Equipped with 10" roller bearing, molded-on rubber wheels. \$38⁵⁰

SHOVEL TRUCK

Speeds up handling of heavy barrels, hampers, cases or cartons. All welded steel construction—a truck that will stand up under rough usage.

Item B-339-B

Roller Bearing metal wheels

\$27⁵⁰

Item B-339-C

Rubber tire, roller bearing wheels \$32⁵⁰

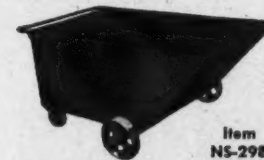
Just out
NEW CATALOG
Send for it today

PALLET RACK and NESTING RING



Designed for handling irregular pieces, this single face pallet rack with stacking corners is of special rolled steel—all welded construction.

Item B-727



HAND DUMP TRUCK

Item NS-298

\$46⁵⁰

Constructed of heavy sheet steel. Heavy steel handle welded to body. Top measures 25¼" by 45". Depth is 17½". Overall height 23". Equipped with two 8" steel wheels, two 4" metal swivel casters. Especially desirable for handling screw machine scrap.

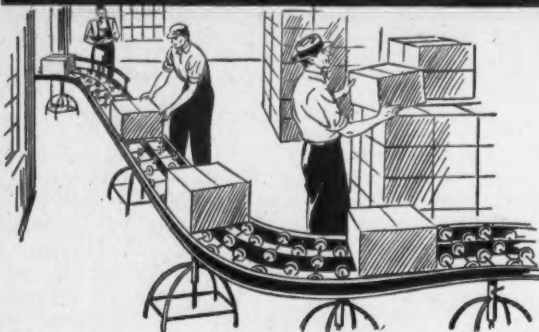
DESIGNED AND MANUFACTURED BY

Palmer Shile Co.

16016 Fullerton Ave., DETROIT 27, MICH.

* When inquiring check CP 4282 on handy form, pgs. 2-3

GET YOUR HAND OUT OF HANDLING



Still relying on handwork to get materials IN and products OUT? Think your handling problem is too changing . . . too complex? Let Buschman "roll-or-wheel" conveyors take over. They are adjustable to your needs . . . in convenient sections and curves . . . easy to set up, easy to change. Specify Buschman Portable Conveyors for your handling problems. Write for Bulletin 10. Agents in Principal Cities.

Buschman

THE E. W. BUSCHMAN CO., INC.

Spring Grove & Clifton

Cincinnati 32, Ohio

When inquiring check CP 4283 on handy form, pgs. 2-3

**Bigger Loads
Bigger Savings**

... when you
move it with a

YALE

**THERE'S A YALE
ELECTRIC TRUCK
TO FIT YOUR NEEDS**

Send for catalog
today, specifying
type of truck in
which you are
interested.

THE YALE & TOWNE MANUFACTURING CO.
4530 Tazewell Street Philadelphia 24, Pa.

HAND LIFT TRUCKS - HAND AND ELECTRIC HOISTS - KRON DIAL SCALES

When inquiring check CP 4284 on handy form, pgs. 2-3

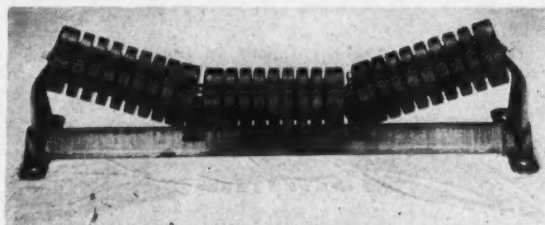
Material Handling

Impact Cushioning Idlers Protect Conveyors, Decelerate Fall of Load

Rubber rings replace usual cover; device is adaptation of use of tires on shafts

USES — For applications where service of an impact-type cushion idler is required. Designed to provide resiliency to meet impact problems.

FEATURES — Non-pneumatic, this new cushion idler consists of rubber rings mounted on the idler core instead of the conventional rubber covered steel idlers. By comparison, maximum deflection is about six times greater. High resiliency of the rubber rings solves the impact problem by decelerating the lump. As a result, the life of even top quality belts is increased materially.



Impact-cushioning rubber rings mounted on idler core

DESCRIPTION — The new device is an adaptation of, and supplements, the company's previous application of pneumatic tires beneath belts to absorb the shock of falling materials. A battery of tires mounted on shafts, revolving in bearings, has been used to protect the belt at dumping points in coal and ore mining, and in rock product operations.

The use of tires as shock absorbers enables a conveyor belt to withstand extreme impact on operations handling heavy lumps up to a ton-and-a-half in size. The rubber ring idler is designed for less severe impact conditions which do not require tires.

SOURCE — The impact-cushioning idler described here is a recent addition to idler equipment of the Goodyear Tire & Rubber Co., Dept. CP, Akron, Ohio . . . or for more information check CP 4285 on the handy form, pages 2 and 3.

★

Conveyor Removes Tank Sediment, Carries it to Disposal Point

Rubber flights travel on chain through pipe, carry metal chips, plant by-products, slag

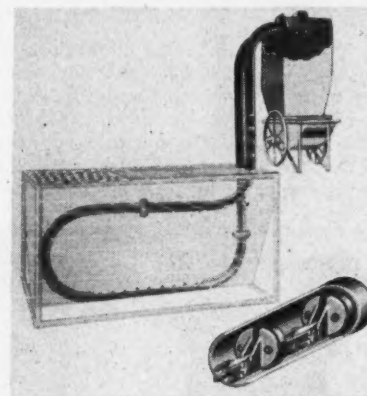
USES — For completely automatic removal and transfer of sediment from settling tanks without removal of fluid. This continuous conveyor collects, transports and discharges for disposal many types of solid or fibrous material. Used in metal working, packing plants, foundries, refractory manufacturing plants.

FEATURES — In handling sediment practically all fluid is allowed to drain back. Pin-connected design of chain permits turning in desired directions to follow any pipe line course desired. Flights are of Neoprene rubber, steel backed.

DESCRIPTION — The conveyor is basically an endless link-chain, motor-driven. Four inch Neoprene rubber flights are mounted at six inch intervals. The con-

veyor operates through the V-bottom of the settling tank, trapping the sediment between the flights and carrying it through a four-inch pipe line to a collection and disposal point.

The drive assembly embodies a high-torque gear transmission enclosed in oil-tight gear case. Heavy sprocket



Typical installation and cut-away view of conveyor

mounted externally drives the conveyor chain. Only one drive sprocket is required. Shear pin is employed in sprocket mounting as a safety feature against breakage due to foreign objects entering pipe and jamming chain. Fractional hp motor and V-belt drive powers transmission. Speed of operation is about two to three feet per minute.

Other sizes in addition to the four inch flights are available if needed. Standard spacing consists of two flights to the foot. Slack in chain assembly can be removed by take-up adjustment.

SOURCE — The continuous conveyor is a development of Honan-Crane Corp. (Div. Houdaille-Hershey), Dept. CP, Lebanon, Ind. . . . or for more information check CP 4286 on the handy form, pages 2 and 3.

★

Hinged Magnets Remove Iron from Materials in Chutes

Non-electric units 4 to 72" wide swing away to permit removal of trapped "tramp iron"

USES — Permanent magnetic separators for removing "tramp iron" and iron particles from materials.

For the protection of grinders, crushers, stokers, pulverizers and other machinery susceptible to damage by iron. For purification of materials such as rubber, plastics, ceramics, textiles, coal, fertilizers, etc.

FEATURES — Non-electric. Saves costly machine-repairs and prevents contamination of product by iron.

DESCRIPTION — Unit consists of series of "C"-shaped Alnico magnets, the poles of which are secured to steel plates, with entire assembly mounted on an aluminum plate. Standard sizes range from 4 to 72" wide, increments of 2". Special magnets built to fill requirements.

SOURCE — Development of Dings Magnetic Separator Company, Dept. CP, 4740 W. McGeogh Ave., Milwaukee 14, Wis. . . . or for more information check CP 4287 on handy form, pages 2 and 3.

Material Handling

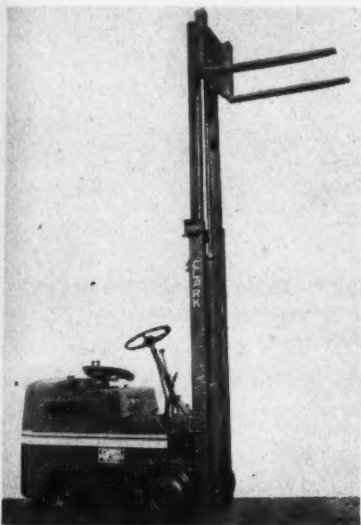
Uprights Extend Tiering Range of 2000 Lb. Truck to 132 Inches

Feature available for both gasoline and battery-operated models

USES — Provides very high tiering capacity and is designed for lifting loads up to 2000 pounds.

FEATURES — Truck performs to a maximum tiering height of 124 inches, yet overall height of basic standard lift is 83 inches, permitting passage through 7 foot doors.

DESCRIPTION — The new style upright which permits higher tiering



Truck tiers 2000 lbs. to 132 inches

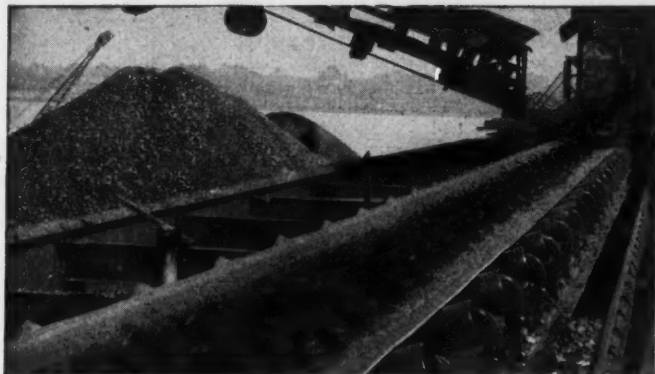
was recently made available for the 2000 pound capacity trucks in addition to two other models previously furnished if desired. It is produced in gas powered and electric battery powered models.

The complete range of lift heights for this truck varies from a low-lift standard of 72 inches to high-lift standard of 132 inches.

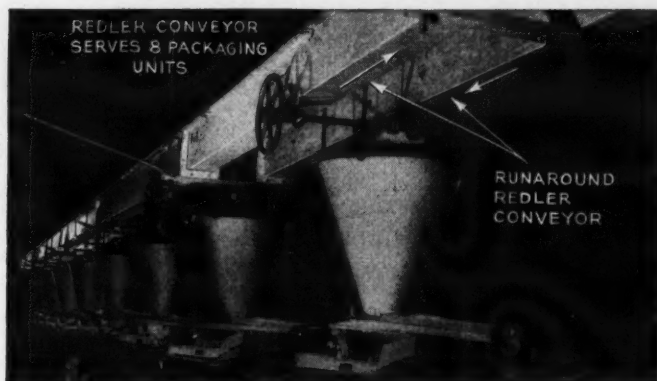
SOURCE — Clark Equipment Co., Dept. CP, Battle Creek, Mich. . . . or for more information check CP 4288 on the handy slip, pages 2 and 3.

For more information on product at right, specify CP 4289 . . . see information request blank between pages 2-3.

Do you see the answer to your bulk material handling problem here?



One of hundreds of Stephens-Adamson engineered coal conveyor systems. This one has unloaded, stored, screened and delivered 300,000 tons of coal a year since 1926 with practically no repairs. Similar systems are cutting costs of handling aggregate, ore and other bulk materials. Each system is specially engineered for the job—easy for S-A because S-A makes all types of conveying equipment and accessories—S-A can use the exact type of equipment the job requires.



When absolute cleanliness without disturbance of balance of mixed ingredients is needed, S-A REDLER Conveyor-elevator Systems get the call. The system shown here conveys food ingredients, distributes the mixture to battery of packaging machines. Sealed casings prevent contamination, eliminate waste from spillage. S-A engineered REDLER Systems are in wide use in the food processing and chemical fields . . . can be engineered to meet virtually any bulk material handling problem.



Feeding coal to boiler hoppers is a job made-to-order for an S-A engineered REDLER Conveyor System. Sealed casings eliminate coal dust. Inherently compact, REDLER systems save space, reduce need for bulky equipment. They move bulk materials fast in a solid mass horizontally, up, down, around corners, anywhere. A perfect example of low-cost handling with the right equipment engineered into the right system.



Special handling problems are readily solved by S-A engineers with their unlimited access to the right equipment, all built by S-A. Here you see an S-A Live Roll Grizzly used to feed large lumps of ore to crusher, while passing fines through to belt conveyor below. What's your handling problem? Difficult? Involved? Talk it over with S-A engineers. Let them show you how the right equipment, engineered into the right system can provide the efficient, economical answer.

STEPHEN S-ADAMSON
11 RIDGEWAY AVENUE, AURORA, ILLINOIS MFG. CO. LOS ANGELES, CALIF. ★ BELLEVILLE, ONT.

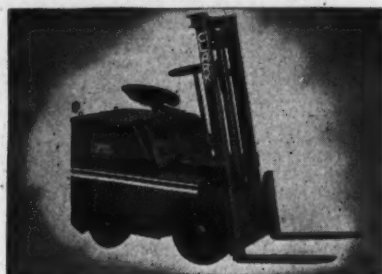
Designers and Manufacturers of All Types of

BULK MATERIAL HANDLING EQUIPMENT

CLARK FORK TRUCKS • GAS-POWERED AND ELECTRIC BATTERY-POWERED • CLARK GAS-POWERED INDUSTRIAL TOWING TRACTORS • CLARK TRUCKS WITH TIP AND DUMP BODIES • ATTACHMENTS FOR ALL MODELS • DURABLE AND EXPENDABLE PALLETES

YOU'LL APPRECIATE WHY CLARK ELECTRIC BATTERY-POWERED FORK TRUCKS ENJOY AN Extraordinary Leadership when you consider these basic advantages:

1. Clark manufactures its own major units.
2. Clark enjoys the benefit of assembly line production.
3. Clark provides maximum interchangeability of parts.



Here is electric battery power in fast, maneuverable form — instantly applicable to countless routine assignments.

Among industrial executives who know operating costs of electric fork trucks—taking into consideration initial investment, maintenance cost and operating cost—Clarks are preferred by a generous margin.

These men's opinions may be summarized in the terse comment of one of them—"Clarks cost less!"

Clark's combined output of gas and electric battery-powered Fork Trucks is by far the largest in the industry.

Building both electric and gas-powered fork trucks, Clark's recommendations are inherently unbiased. You get wholly objective counsel concerning your operations and the types of machines that will serve you most efficiently and economically. Here indeed is a good recommendation!—Consult Clark.



How to cut hauling costs "to the bone"—in one easy picture-lesson.

CLARK ELECTRIC AND GAS POWERED FORK TRUCKS AND INDUSTRIAL TOWING TRACTORS



CLARK EQUIPMENT COMPANY, TRUCKTRACOR DIVISION, BATTLE CREEK 9, MICH.
REPRESENTATIVES IN PRINCIPAL CITIES THROUGHOUT THE WORLD

When inquiring check CP 4290 on handy form, pgs. 2-3

Material Handling

Reverse Roller Conveyor Units to Handle Oversize Loads

Rollers set above side rails on one side to carry objects up to 24" wide



Reversible conveyor

USES — Designed for quick conversion to conveying requirements of packages or unit loads that are wider than the conveyor sections which measure 24 inches between side rails.

FEATURES — Being extremely light, any operator can turn one of the sections in an instant to meet requirements of the load to be moved.

DESCRIPTION — The "two-in-one" portable roller gravity conveyor is made with the rollers set high above the side rails on one side to permit handling of oversize packages or objects. The other side has rollers sunk below side rails. Legs of conveyor sections are supplied in double post type, with adjustable height units varying from 12 inches to 72 inches.

The sections are 10 feet long and 90 degree curves may be provided for. Widths inside frames are either 14 3/4 inches or 16 3/4 inches. Rollers are 2 inch diameter x 16 ga. with rolled ends set on 4 inch centers.

SOURCE — Island Equipment Corp., Dept. CP, 101 Park Ave., New York 17, N. Y. . . . or for more information check CP 4291 on the handy form, pages 2 and 3.

*

Twin-Clamp Barrel-hoist Is Non-Tipping

Easily attached and detached; clamp grip increases with load



Lifter fits standard barrel

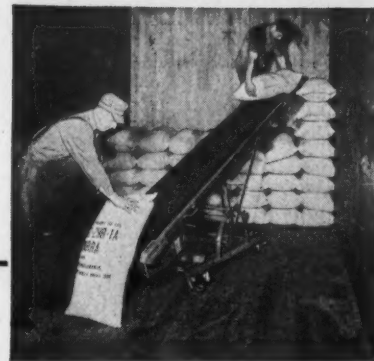
USES—For hoisting, moving and various barrel handling operations.

FEATURES — Permits hoisting of barrel straight up rather than by raising it at an angle or gripping it and raising from one side.

DESCRIPTION — This dual clamp is an adaptation of the Volz clamp developed by this

company. The device consists of a cross arm the width of the standard barrel with a clamp attached to each end of the arm.

The center of the cross bar is provided with a ring



FASTER HANDLING IN CARS . . TRUCKS . . WAREHOUSES . . with the HANDIBELT

There's no problem to fast handling in confined spaces if you use the Handibelt portable conveyor — save lifting — carrying; users report 8 to 10 man hours saved and volume of items handled more than doubled. Easily wheeled about by one person. Handles boxes, bags or cartons weighing up to 135 pounds. Can be used inclined, declined or horizontal. Belt is free of side rails and reversible in movement. Operates from any ordinary lighting circuit. Available in two models: No. 11 piles up to 7 ft. 6 inches; No. 16 piles up to 10 ft. 6 inches. Get complete information — write for Handibelt Bulletin No. CP-38.

STANDARD CONVEYOR COMPANY
General Offices: North St. Paul 9, Minn.
Sales & Service in principal cities



When inquiring check CP 4292 on handy form, pgs. 2-3

With Screw-Flo

you have everything!

YOU REDUCE

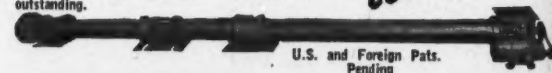
Installation Costs
Handling Costs
Operating Costs

Plus Getting All This:

1. No Infestation
2. No Dusting
3. Moisture-proof
4. Accessibility
5. Safety

Screw-Flo handles any free-flowing bulk material. It is a tubular conveyor that is precision built and noiseless. So simple it's outstanding.

The GREATEST ACHIEVEMENT IN BULK MATERIAL CONVEYING!



U.S. and Foreign Pats.
Pending

BOTH THE SCREW AND THE TUBE REVOLVE

Screw at its regular rapid speed. Tube slowly about twice a minute. Feed and discharge spouts arranged to suit any layout. A companion unit to our popular Screw-Lift so widely used by processors.



Write for Form M-702

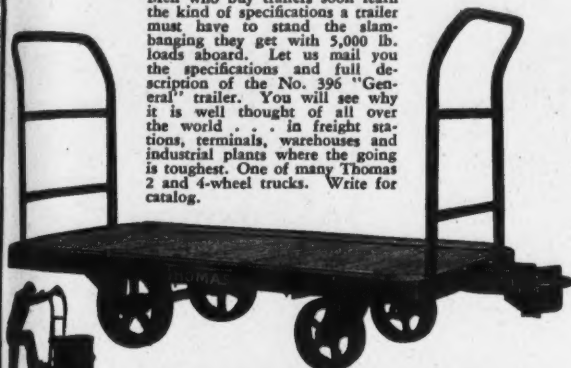
When inquiring check CP 4293 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

THOMAS Heavy Duty Industrial Trailer

The "GENERAL" Leads the Field

Men who buy trailers soon learn the kind of specifications a trailer must have to stand the slamming they get with 5,000 lb. loads aboard. Let us mail you the specifications and full description of the No. 396 "General" trailer. You will see why it is well thought of all over the world . . . in freight stations, terminals, warehouses and industrial plants where the going is toughest. One of many Thomas 2 and 4-wheel trucks. Write for catalog.



THOMAS SAFETY ONE MAN BARREL TRUCK

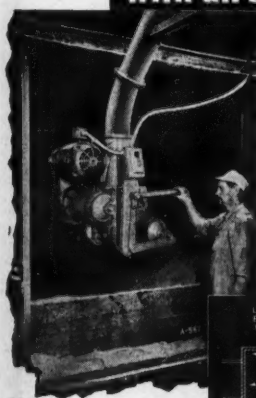
Easy for one man to handle up to 1000 lb. barrels, drums, quickly, safely. Simply engage sliding hook in rim of barrel, pull handles slightly — hold with foot. That's all! Loads, unloads automatically. Trucker never touches barrel. Load balanced perfectly. No arm strain. Welded steel, rubber tires. Hyatt bearings. Low priced. Try one. Return collect if not "best yet."

THOMAS TRUCK & CASTER CO.
4860 Mississippi River Keokuk, Iowa

When inquiring check CP 4294 on handy form, pgs. 2-3

IT'S A CINCH...

TO LOAD BOXCARS FASTER
with an S-A SWIVELoader



Dry, bulk material (up to 2' size) can be loaded and trimmed mechanically. The centrifugal thrower unit, swung into position inside car door, discharges material to any part of car with only part-time attention of operator. Loading is completed in a fraction of the time and cost required by hand trimming.

Write for Bulletin No. 1044.



STEPHENS-ADAMSON MFG. CO.

Tellevel-Bin Level Controls Car Loaders Car Pullers Winches SealMaster Ball Bearings

11 RIDGEWAY AVE., AURORA, ILLINOIS

When inquiring check CP 4295 on handy form, pgs. 2-3

MARCH, 1948

Material Handling

through which the hook of the hoist or other lifting media can be attached. The clamps themselves can be attached and detached to and from the barrel instantaneously.

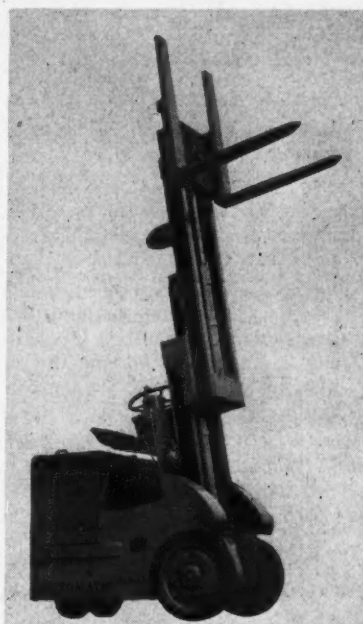
The clamps hold with utmost security, as the heavier the load the tighter the grip of the Volz clamps.

SOURCE — Merrill Brothers, Dept. CP, Maspeth, N. Y. . . . or for more information check CP 4296 on the handy form, pages 2 and 3.

★

Shortest Fork-Lift Truck Has 68" Clearance; Tiers to 108" and Handles Up to 2000 Lbs.

Maneuvers loads up to 48" in freight cars, trailers and warehouses



Forks raise to 58" before uprights begin to extend

in areas too small or crowded for usual fork truck. Low collapsed height of 68 inches permits easy operation where clearances are a problem.

Maximum lift of 108 inches permits tiering to virtually same heights as trucks with 83 inch collapsed height.

Telescopic lift is designed so that the forks and uprights are raised independently by separate rams. The forks raise to 58 inches before the uprights begin to extend.

DESCRIPTION — This unit is named the "Shipper" and incorporates design features of the maker's standard "Skylift" fork truck. These include the Newmatic controller, which acts as the electric counterpart of automotive automatic gearshifts.

SOURCE — Automatic Transportation Company, Dept. CP, 101 West 87th St., Chicago, Ill. . . . or for more information check CP 4297 on the handy form, pages 2 and 3.

USES — For handling, loading, unloading, storing and tiering operations, particularly under crowded conditions, both vertical and horizontal. Dimensions designed especially for refrigerator cars, motor trucks, trailer bodies, congested warehouses and other areas involving crowded aisles, narrow loading docks, low doors, etc.

FEATURES — Announced as the shortest fork truck made which is capable of handling 2000 pound up-to-48 inch loads for working with utmost effectiveness

OVERHEAD COMES DOWN— PRODUCTION GOES UP
... when you lift and lower with a

YALE

MIDGET KING ELECTRIC HOIST

THERE'S A YALE HOIST TO FIT YOUR NEEDS
Send for catalog today, specifying type of hoist in which you are interested.

YALE THE YALE & TOWNE MANUFACTURING CO.
4530 Tacony Street Philadelphia 24, Pa.
ELECTRIC INDUSTRIAL TRUCKS • HAND LIFT TRUCKS • KRON DIAL SCALES

When inquiring check CP 4298 on handy form, pgs. 2-3

Improve Your Storage Efficiency by Floor-to-Ceiling Stacking . .

WITH "Weld-Bilt"
ELECTRIC PORTABLE ELEVATOR

It's easy to stack ceiling-high when you have a WELD-BILT Elevator on the job. Saves valuable floor space, increases your production space, and improves the working efficiency of your storage facilities.

WELD-BILT Portable Elevators are available in a wide variety of sizes and types: single or double telescoping, hinged types, electrically or hand operated. Our WELD-BILT engineers can quickly build a special adaptation to fit any unusual needs you may have.

WELD-BILT Portable Elevators are saving their cost in industrial plants everywhere. They may do the same in your plant. Write for catalog and complete details.

★ ★ "Weld-Bilt" PRODUCTS ★ ★

Other WELD-BILT Products—
Hydraulic Lift Trucks • Two-Wheel Trucks • Platform Trucks • Pallet Trucks • Skid Platforms • Tying Machines.



WEST BEND EQUIPMENT CORP.
226 WATER ST. WEST BEND, WISCONSIN
MATERIALS HANDLING ENGINEERS

When inquiring check CP 4299 on handy form, pgs. 2-3

Handling Costs Are **VERY IMPORTANT**

Reduce them with **DRACCO** PNEUMATIC CONVEYORS



Consult
DRACCO
Engineers

The eyes of Industry are focused on the problem of handling materials as the most logical means of reducing costs. Many plants efficient in every other way can reduce handling costs. If you move chemicals, grains and granular materials it is possible that DRACCO Pneumatic Conveyors can save you considerable money. It will pay to reduce the cost of this operation to the minimum. Why not consult DRACCO Engineers? They have over 30 years experience reducing handling costs in hundreds of plants. They can probably reduce yours.

For Further Information Write

DRACCO CORPORATION

4060 E. 116th St., Cleveland 5, Ohio New York Office: 130 W. 42nd St.

**DUST CONTROL EQUIPMENT
PNEUMATIC CONVEYORS • METAL FABRICATION**

When inquiring check CP 4300 on handy form, pgs. 2-3

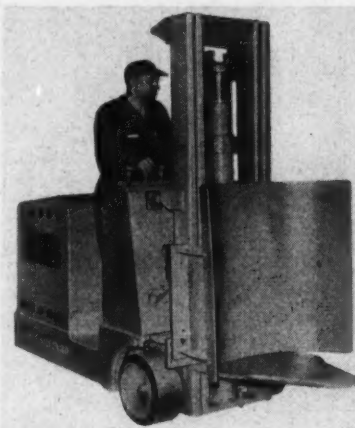
Material Handling

Non-Rotating Attachment Handles Paper Rolls, Other Loads

Toeplate permits entry under headings of large rolls without causing damage

USES — Handling paper rolls, picking them up and depositing them standing in a vertical position.

FEATURES — Attachment consists of a special ground and polished toeplate enabling it to enter under headings of large rolls of paper without damaging them. Curved backplate fits contour of roll. Need of dunnage or pallets is eliminated.



Backplate, toeplate move rolls without damage

DESCRIPTION — The attachment may be used on maker's electric, gas or gasoline-electric power fork trucks and is quickly detachable for subsequent attachment of any type of forks.

This non-rotating unit permits the roll to nestle securely in the backplate when the mast is tilted backwards. The dimensions of the unit are dependent upon the maximum and minimum weight, the diameter and height of rolls to be handled. Unit is made in capacities to 3000 pounds.

SOURCE — Lewis-Shepard Products Inc., Dept. CP, 289 Walnut St., Watertown, 72, Mass. or for more information check CP 4301 on the handy form, pages 2 and 3.

★

Reveals Anti-friction Developments in Carbide Cutting Tools

Increased rigidity and accuracy of machine tool spindles by means of anti-friction bearings is explained in a comprehensive 60-page catalog of machine tool bearings and spindle design. Literature shows spindles equipped with carbide tools permitting greater speeds, feeds and depth of cut, and discusses in detail bearing applications for turning, boring equipment and grinding machines. These include single and multiple spindle lathes, boring heads, milling machines, drill spindles and bore, OD, surface, tool, special grinders.

13-page engineering section relates cutting tool loads to bearing life, deals with bearing selection, load distribution, speed limitations, mounting, distribution. Other sections give bearing tables, load data for cylindrical roller, thrust ball and angular bearings, tolerance tables, shaft and housing dimensions. Catalog 272, issued by SKF Industries, Inc., Dept. CP, Front St. & Erie Ave., P. O. Box 6731, Philadelphia 32, Pa. When inquiring, specify CP 4302 on handy form, pages 2 and 3.

multiplying manpower four times....

Yes—you get four times the results with this latest Hydro-Electric truck (in pallet and platform models) . . . engineered and built by the Stuebelings, pioneers in Lift Trucks since 1910. Get new maneuverability and dependability . . . trouble-free service, even on 24 hour duty.

New exclusive Stuebeling features include power hydraulic lift . . . two speeds forward and reverse . . . dynamic brake . . . fingertip control . . . sealed gear transmission . . . are described and illustrated in a new bulletin. Write for your copy today.



Write for copy of
Bulletin H.



**LIFT TRUCKS
INCORPORATED**

2425 Spring Grove Ave., Cincinnati 14, Ohio

When inquiring check CP 4303
on handy form, pgs. 2-3

Material Handling

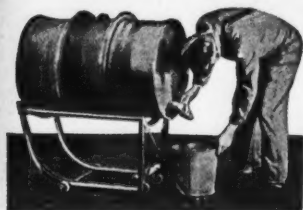
Drum Drain Stand

Handles all sizes for complete drainage

USES — Allows one man to tilt drum from a vertical position on the floor to a horizontal elevated level for draining. Positions drum spigot approximately 18" above floor.

FEATURES — Prevents personal injuries, saves time and allows complete drainage of drum contents.

DESCRIPTION — Rigidly constructed to handle all sizes of drums



Spigot placed 18" from floor

and barrels. Angle iron fabrication with electric welds. Two wheels and two swivel casters for utmost mobility.

SOURCE — Industrial Products Co., Dept. CP, 2834 North 4th St., Philadelphia, 33, Pa. . . . or for more information check CP 4304 on the handy form pages 2 and 3.

★

Continuous Blowoff Systems Save Wasted Heat

Five different flash-tank and heat-exchanger systems for recovering otherwise wasted heat in boiler blowoff water are described in a 16-page bulletin.

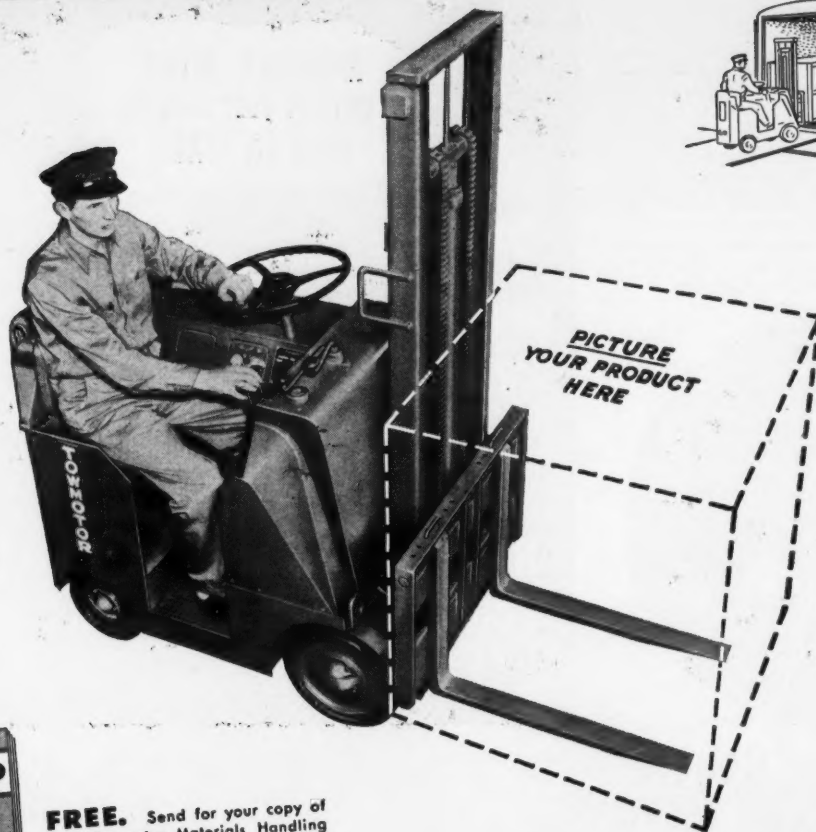
Literature includes quick-calculator chart for estimating savings possible with these systems, with explanatory data. Two thermostatically controlled systems for automatically proportioning rate of blowoff to make-up water are described. A list of users includes some typical dollar savings realized, with user's name. Publication 4410.

Issued by Cochrane Corporation, Dept. CP, 17th St. & Allegheny Ave., Philadelphia 32, Pa. When inquiring specify CP 4305 on handy form, pages 2 and 3.

For more information on product at right, specify CP 4306 . . . see information request blank between pages 2-3.

You Need MH to SAVE TIME!

✱ M H is MASS HANDLING
— the systematic movement of
the most units, in the shortest
time, at the lowest cost.



FREE. Send for your copy of the "Towmotor Materials Handling Analysis Guide"—it shows you how to analyze and improve handling operations in your plant.

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REPRESENTATIVES IN PRINCIPAL CITIES



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THE ONE-MAN-GANG

Fork Lift Trucks and Tractors

WHY BUILD A NEW PLANT

when you can modernize your present handling methods and streamline production operations with Towmotor Mass Handling? Towmotor Fork Lift Trucks, Tractors and Accessories will insure the most efficient use of present production equipment, manpower and space. Learn now how a versatile Towmotor can save time by speeding up handling operations in your plant.

RECEIVING • PROCESSING • STORAGE • DISTRIBUTION

Let MUSCLE MIKE move your material EASIER, FASTER with NEW 1948 TRANSPORTER

Amazing *Feather-Touch* Operation

Thousands and thousands in every kind of industry have been letting Muscle Mike, the mighty midget of power in Automatic's Transporter, lift and move 4000 to 6000 pounds of material with amazing touch-of-thumb ease—have cut their handling costs as much as 60%—released critical labor for more productive work, and ended for employees the grueling labor of manual handling.

Now, in the amazing New 1948 TRANSPORTER, New DUAL-LIFT FOOT PUMP and other new features give you astounding savings in time and labor—new economies in original cost that make Transporter today's best buy in motorized hand trucks. Send the coupon.



Push-Button Control MOVES Loads with *Feather-Touch* of Thumb

New 1948 Automatic Transporter MOVES loads just as easily as it LIFTS them! Easy FEATHER-TOUCH pressure of the thumb on the push buttons in the handle, starts load forward or reverse—you guide the load electrically with no manual effort.

New double-position brake—applied either by raising or lowering guide handle beyond speed positions, provides steering and braking leverage at the same time for hauling or ramps.

Send for facts about this amazing miracle truck—and if you wish, an ATCO Material Handling Specialist will survey your handling costs FREE! Mail coupon.

Look to the Leader—For All That's New



MANUFACTURERS OF THE FAMOUS TRANSPORTERS, TRANSTACKERS, AND SKYLIFT ELECTRIC TRUCKS

When inquiring check CP 4307 on handy form, pgs. 2-3



Automatic's new DUAL-LIFT FOOT PUMP now reduces by an average of one-third, the foot pressure necessary to lift up to 6000 pound loads into moving position or maximum height. Quick, FEATHER-TOUCH STROKES get the load to moving position in a matter of SECONDS!

In a six months series of exhaustive and grueling tests, DUAL-LIFT ran day and night lifting the equivalent of a 10,000 pound load at 140 strokes per minute. Results prove that this amazing new Foot Pump will give two or more years service with

no appreciable wear. It can take punishment, is guaranteed to stand up.

Automatic's exclusive new hydraulic lift pump development combines a low pressure (high speed) cylinder for raising the platform or forks into contact with skid or pallet, and a high pressure (low speed) cylinder for raising the load.

Release of pressure on pedal opens valve that permits high speed cylinder to idle while high pressure cylinder is lifting the load, requiring no extra foot pressure on the stroke that lifts the load itself. Use convenient coupon!

AUTOMATIC TRANSPORTATION COMPANY

DIV. OF THE YALE & TOWNE MFG. CO.

41 West 87th Street, Dept. C-8, Chicago 20, Ill.

() Send me complete facts about your New 1948 Transporter and New DUAL-LIFT FOOT PUMP.

() Have an ATCO Specialist make a free survey of my material handling costs.

Company Name.....

By.....Position.....

Street Address.....

City.....Zone.....State.....

Material Handling

Versatile "Pancake" Motor is Less Than Half Size of Conventional Units

Flange-mounted, axial air gap motors for vertical, horizontal or pivot base mounting are covered by a 16-page bulletin. Fully illustrated, booklet shows representative applications where compact, "pancake" construction and versatile design of motor facilitate the operation of motor reducers, fans, and exhausters.

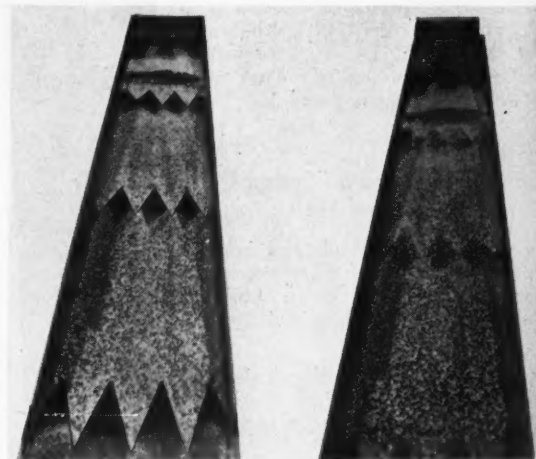
Constructional features are pointed out, with pictures of component parts. Diagrams and dimensional tables are presented for various mountings. Motor is described as "less than half" the size of conventional motors, weighing approximately 30% less. Comparative dimensions are given. Two pages are devoted to single phase types, with wall or motor-mounted control. Bulletin 2760, issued by Fairbanks, Morse & Company, Dept. CP, 600 S. Michigan Ave., Chicago 5, Ill. When inquiring specify CP 4308 on handy form, pages 2 and 3.

★

Step-Plate Vibrating Conveyor Moves, Mixes Bulk Materials

Side slip discharge produces turnover so important during infra-red treatment

USES — Handles a wide variety of free-flowing materials. When used for mixing operations, two or more materials are accurately fed to the conveyor for mixing



Step plates produce side slip, turning, mixing materials conveyed by vibration

while conveyed by vibration. The turn-over feature of the conveyor makes it especially serviceable in conveying materials being treated by infra-red or ultra-violet lights. Its use is also advantageous in roasting or toasting processes using high temperature heat sources.

FEATURES — No degradation of material is produced by design and action of the conveyor. Quality of the product is maintained and no fines are produced.

DESCRIPTION — Mix-R-Step is the highly descriptive name of this vibrating conveyor. It embodies a series of stepped plates which produce a side slip as the material falls from one step to the next. This side slip discharge causes an intermingling of particles.

The Mix-R-Step type of conveying surface has been

Detroit

ELECTRIC HOISTS
PNEUMATIC HOISTS
ELECTRIC TRAVELING CRANES

A type for every purpose. Quick operating, efficient material handling units.

Give us an outline of your material handling problem. We will provide recommendations.



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& MACHINE CO.

8222 Morrow St.
Detroit 11, Mich

Ask for this bound set of bulletins on Detroit Hoists and Cranes

When inquiring check CP 4309 on handy form, pgs. 2-3

NON-SPILLAGE OF VALUABLE MATERIALS

is assured
When You Use This

**COVERED
Owen Bucket**

Consistent capacity grabs are obtained with rapid, complete discharge. Shown here handling grain, but this covered bucket is adaptable to many sulphur materials.



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WRITE TODAY
FOR COMPLETE DETAILS

7050 Breakwater Avenue, Cleveland, O.
Branches: New York Philadelphia Chicago Berkeley, Calif.

When inquiring check CP 4310 on handy form, pgs. 2-3

Material Handling

applied successfully on indirect type vibrating dryers and coolers where steam or chilled water are used to heat or to cool the conveying surface. Its use also increases capacity and/or coefficient of heat transfer. This new conveyor is manufactured in standard section lengths and widths.

SOURCE — This development in electrical vibrating mixing conveyors has just been announced by The Jeffrey Mfg. Co., Dept. CP, Columbus, Ohio . . . or for more information check CP 4311 on the handy form, pages 2 and 3.

Motorized Wheelbarrow Holds 1500 Lbs.; Dumped with Foot Latch

Carries concrete, sand; useful in chemical and mining industries; has 2½ hp motor

USES — For transportation of concrete, sand, mortar, bricks, tools, or small equipment. Also in chemical and mining industries.

FEATURES — Easily controlled and maneuvered as the forward and reverse gears, as well as steering, are operated by the same lever. Turns in radius of four feet.



Operator can ride motorized 'barrow

Power unit is detachable from cart by four bolts. Thus, it can be used on flat bed or other type carts, making it a universal power unit for all types of work.

DESCRIPTION — The "Power-cart" is 81½ inches long, loading height 31 inches. Power: 2½ hp (minimum) gasoline engine. It holds 1500 pounds. Dumping is easy, because the load is balanced in the tray and because the operator can be either standing or sitting.

The tray is released with a foot-operated latch. A mechanical brake is also foot operated. The power-unit is air-cooled and has a V-belt and chain drive. Driving speeds are six to eight miles per hour and are foot throttle controlled. Seat is tractor type.

SOURCE — Gar-Bro Mfg. Co., Dept. CP, 2416 East 16th St., Los Angeles, Cal. . . . or for more information check CP 4312 on the handy form, pages 2 and 3.

NEW STEVEDORE, JR.

POWER BELT CONVEYOR

ADDS HANDLING FLEXIBILITY



This portable unit of proved design has been re-vamped from end to end. Flexible adjustments. For instance, 11 ft. model permits 82" stacking height. Conveys on the level at heights of 18¾" to 64¾" from floor. New positive action screw and bevel gear supports make height adjustment easier, safer. Heavy-duty side channels; full length guard rails; 25% wider belts; moves from job to job on free-rolling casters. Details on request.

ports make height adjustment easier, safer. Heavy-duty side channels; full length guard rails; 25% wider belts; moves from job to job on free-rolling casters. Details on request.

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350 Rapistan Bldg., Grand Rapids 2, Mich.

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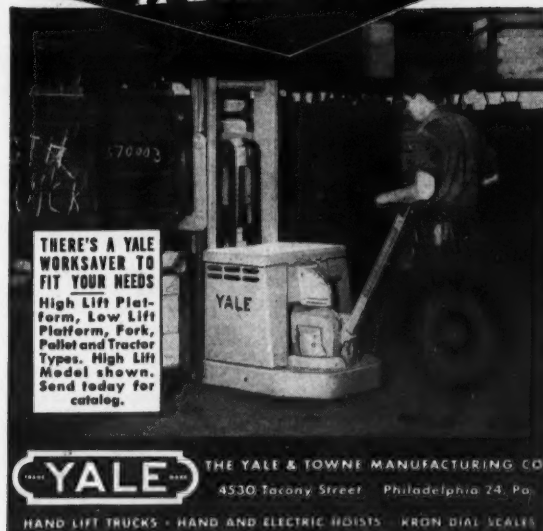
MATERIAL HANDLING EQUIPMENT



When inquiring check CP 4313 on handy form, pgs. 2-3

ELECTRIC POWER
DOES ALL THE WORK
WHEN YOU STACK IT WITH A

**YALE
WORKSAVER**



THERE'S A YALE WORKSAVER TO FIT YOUR NEEDS
High Lift Platform, Low Lift Platform, Fork, Pallet and Tractor Types. High Lift Model shown. Send today for catalog.

YALE

THE YALE & TOWNE MANUFACTURING CO.
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HAND LIFT TRUCKS • HAND AND ELECTRIC HOISTS • KRON DIAL SCALES

When inquiring check CP 4314 on handy form, pgs. 2-3

ACCULUTE

... for rapid, accurate preparation of Volumetric Solutions.

... Laboratories requiring speed and accuracy are using Acculute with excellent results.



ACCULUTE SAVES TIME—Open the ampoule—transfer the contents to a volumetric flask—dilute to volume (1000 ml)—your volumetric solution is prepared.

ACCULUTE IS RELIABLE—Close control of the special manufacturing processes insures uniformity of the product. Acculute does not vary in chemical content—you can depend on it.

ACCULUTE IS ACCURATE—Each ampoule contains the precise concentrated equivalent of the normality stated on the label. There is no need for subsequent standardization.

Caustic solutions are supplied in wax ampoules, others in chemically resistant glass.

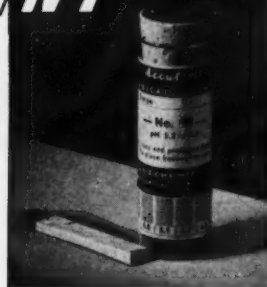
Complete instructions for preparing Acculute solutions are furnished with each unit.

A special bulletin, listing Acculute concentrates with prices and discounts will be sent on request.

ACCUTINT

pH TEST PAPERS

**Simple
Rapid
Accurate**



Accutint is simple to use—just place a strip of the paper in contact with the substance to be tested and compare the color of the exposed portion with the master colors on the vial.

Accutint is rapid—it gives immediate results—no calculations are necessary—visual color comparison indicates the pH value.

Accutint is accurate—to 1 pH in the wide range paper and to 0.3 pH in the fractional range. Wide range papers are recommended where the pH value is not known to be within the limits of a fractional range paper. Fractional range papers are used for greater accuracy after the range has been determined.

S-65277 ACCUTINT TEST PAPERS. Packed in glass vials, each vial contains five pads or 100 strips. Color chart and instructions are included with each vial. Per Vial.....\$0.65

Per 72 Vials.....\$59.40

S-65278 MASTER COLOR CHART. Illustrates color standards and readings for every pH value in each of the twenty-three wide and fractional ranges. Chart helps in the selection of the most suitable ranges or papers for a specific purpose. Each.....\$3.25

E. H. SARGENT & CO., 155-165 E. Superior St., Chicago 11, Illinois
Michigan Division: 1959 E. Jefferson, Detroit 7, Michigan

SARGENT
SCIENTIFIC LABORATORY SUPPLIES

When inquiring check CP 4315 on handy form, pgs. 2-3

Page 38

Process Instrumentation

Instrument Provides Continuous Record of Turbidity Conditions

Available in ranges of from 0 to 3 p.p.m., 0 to 50 p.p.m., 100 p.p.m. and up

USES—Measures various undissolved substances or emulsions present in solutions, and can be applied to boiler feed water, water clarity, oils, solvents and other liquids.

FEATURES—Designed primarily to monitor the turbidity, color or other light absorption property of solutions in process. This may be in the main line of a process or a sampling line.

DESCRIPTION—Unit comprises a viewing chamber through which the solution to be measured is passed, and attached to one end is a light source and the other a photo relay unit. Output from the photo relay is connected to a potentiometric recorder which gives a continuous record of the condition of turbidity. Instrument may be equipped with warning lights or electrical control contacts.

Both open and closed type chambers are used. Generally the open type chamber gives the maximum cleaning facilities, but solutions flowing in pipe lines may be measured by introducing a pipe "T" with windows. Chamber is a function of sensitivity and range required.

Instrument is available as a recorder, indicator or control unit.

SOURCE—Manufactured by Ess Instrument Company, Dept. CP, 96 S. Washington Ave., Bergenfield, N. J. ... or for more information Check CP 4316 on handy form, pages 2 and 3.

★

Vapotester Detects Combustible Gases or Vapors

Two-range instrument has one range to analyze combustible gases in terms of their lower explosive limit; a second scale indicates gases in their toxic range

USES—For the determination of hazardous conditions due to the presence of combustible or explosive concentrations of flammable gases or vapors.

FEATURES—This new model is a two range instrument that increases the sensitivity ten fold.

One range analyzes combustible gases in terms of their lower explosive limit. A second scale indicates gases in their toxic range.

DESCRIPTION—Basic principle of the instrument is the measurement of increases in the resistance of a filament when exposed to a gas or vapor-air mixture



Vapotester indicator

as compared with a filament not exposed to such gas or vapor-air mixture.

The two filaments, as two legs of a balanced Wheatstone Bridge circuit, are housed in a single cell block having two chambers. Comparison filament is completely sealed in its chamber. Analyzing filament is housed in an open chamber that permits air or gas to be drawn through it.

When the combustible gas-air mixture enters the open chamber, it ignites on the surface of the analyzer filament and increases its temperature. This increases the resistance and unbalances the Wheatstone Bridge circuit so that current flows through the meter. Amount of current flowing through the meter is directly proportional to the percentage of gas (by volume) present up to the lower explosive limit. Readings are therefore in terms of percentage of the lower explosive limit of the combustible gas-air mixture.

On the face of the instrument is a three position switch; one position for the combustible range (1-1 range), one position for checking the voltage and third position to increase sensitivity of first scale ten times.

Thus on one scale without any special adjustments the P. P. M. of the gas being tested may be read. A calibration curve chart is furnished with the instrument and shows how the unit will read on certain gases. To interpolate the meter readings into P. P. M. of the gas present, samples of gas are taken in least sensitive range first (1-1 range). If meter reads below .1, meter indications will be automatically multiplied ten times when switch is thrown to the more sensitive position



Identifying colors for chemical testing and quality control is easy with the G-E spectrophotometer—eliminates guess work. It has been adopted by the American Standards Association as the basic color-measuring instrument. The spectrophotometer is used continually at Western Regional Research Laboratory in Albany, California for studies in proteins.

You can test both liquids and solids—keep a graphic record of all color comparisons. Use it as a check on all mixing and blending operations. It's easy to use, requires little maintenance. Records are easily interpreted, may be kept indefinitely. Write for Bulletin GEA-3680A. Section 653-24, Apparatus Department, General Electric Co., Schenectady 5, N. Y.

GENERAL ELECTRIC

When inquiring check CP 4317 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

(10-1 range). By using the calibration chart and the 10-1 range meter reading, the P. P. M. of the gas is determined.

SOURCE — Instrument is a development of Davis Emergency Equipment Co., Inc., Dept. CP, 45 Halleck St., Newark 4, N. J. . . . or for more information check CP 4318 on the handy form, pages 2 and 3.

Instrument Measures Wet Film Thickness of Paints, Lacquers, Etc.

Wet film thickness within a range from 0 to 4 mils is measured with an accuracy of 0.1 mil

USES — Instrument measures the wet film thickness of paint, varnish, lacquers and related products.

FEATURES — Measures within a range from 0 to 4 mils with an accuracy of 0.1 mil by simply holding the axle of the gauge between the thumb and forefinger, rolling the gauge over the wet film, and reading the calibrated engraved scale on the side of the outer wheel. Instrument permits fast and accurate readings.

DESCRIPTION — Thickness gauge is essentially an eccentric wheel supported by two concentric wheels.

When placed on a plane surface, the clearance between the inner eccentric wheel and the surface upon which the two outer concentric wheels rest ranges from 0 to 4 mils. In operation, the gauge is placed on a wet film so that the greatest clearance between the eccentric wheel and the film, which is 4 mils, is directly over the wet film. Gauge is rotated over the film one-half revolution in one direction toward the minimum reading indicated by the engraved mark "O" on the gauge.

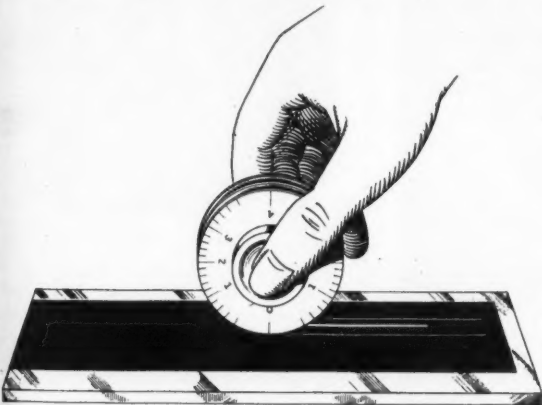


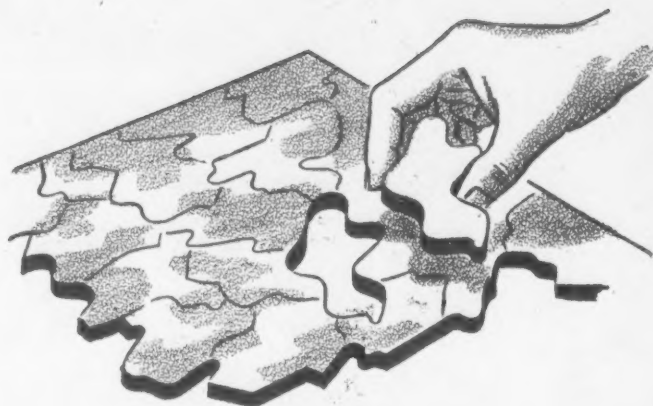
Fig. 1.

Wet film thickness gauge

During rotation the eccentric wheel will at some intermediate point contact and "pick up" the wet film on its radius. Gauge is removed from the film and the initial "pick up" point of the material is read to the nearest 0.1 mil on the engraved scale. This reading may be checked by repeating the above operation and rotating the wheel in the opposite direction from the first determination, as the instrument is calibrated to take film thickness measurements when rotated in both directions. If a determination has been made on each half of the wheel, the average of the two readings may be taken as the true wet film thickness.

SOURCE — Made by Henry A. Gardner Laboratory, Inc., Dept. CP, Apparatus Division, 4723 Elm St., Bethesda, Md. . . . or for more information check CP 4319 on the handy form, pages 2 and 3.

an "reason why"



designed to fit a particular problem

Armored Rotameters . . .

Are especially designed . . .
To fit a requirement . . .
Solve a problem.

They measure the rate-of-flow . . .

Of liquids under very high pressures . . .
And hazardous fluids . . .
Clear or opaque.

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Is just one example . . .
Of a rotameter designed . . .
For a particular purpose.

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For reducing effect of viscosity changes . . .
For use in food and dairy industries . . .
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JET APPARATUS • CONDENSERS AND VACUUM PUMPS • HEAT TRANSFER EQUIPMENT
VALVES • ROTAMETERS AND FLOW INDICATORS • GEAR PUMPS • STRAINERS
OIL BURNING EQUIPMENT • SPRAY NOZZLES AND ATOMIZERS • RADIATION TUBES

When inquiring check CP 4320 on handy form, pgs. 2-3

Carbon CONTROL

WITH GREATER PRECISION AND SPEED

The improved Dietert-Detroit Carbon Determinator provides an easy method for making either preliminary or final carbon tests on all metals, organic or inorganic materials.

Principal Advantages:

RELIABLE: Results reproduced consistently—minimum chance for human error.

FAST: Results available within 2 minutes after sample is weighed.

ECONOMICAL: Low first cost and low operating costs.

WIDE RANGE: Burettes available for low carbon materials, steels, irons and organic substances.

Construction and Operation

- 1 Mechanically operated leveling bottle.
- 2 Includes combustion gas cooler.
- 3 Atmospheric pressure applied automatically.
- 4 Gas burette cooled by absorption liquid.
- 5 Absorption vessel and gas burette integral and remain at same temperature.
- 6 Easy precision leveling to meniscus line.
- 7 Automatic pressure equalizer.
- 8 Compact assembly requires minimum space.
- 9 Single, large, durable gas valve controls entire operation.

The Dietert-Detroit Carbon Determinator is installed either in the laboratory or in the plant for profitable carbon control and improved product quality.

Price \$219⁰⁰
f.o.b.
DETROIT

Process Instrumentation

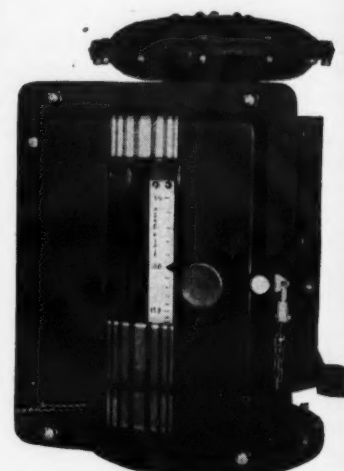
Controller Maintains Correct Air-Fuel Ratio

Can be equipped with automatic variation of ratio to increase or decrease the per cent of air at reduced fuel flows

USES — Equipment is designed for large industrial furnaces, to control air flow in relation fuel flow.

FEATURES — Unit is simple, accurate, sensitive, and has ample flexibility to meet any operating condition.

DESCRIPTION — Controller is a balance type instrument, and ratio can be adjusted manually for operation with fuels of various BTU content. As fuel flow changes, the in-



Air-fuel controller

strument maintains air-fuel ratio constant at the desired control point. Or, it can provide automatic variation of ratio, increasing or decreasing the per cent of air at reduced fuel flows.

Instrument mounts readily on the furnace panel along with other equipment. Controller employs electric-motored valve drives.

SOURCE — Controller is a development of Leeds & Northrup Company, Dept. CP, 4934 Stenton Ave., Philadelphia 44, Pa. . . . or, for more information check CP 4321 on the handy form, pages 2 and 3.

For more information on product at left, specify CP 4322
see information request blank between pages 2-3.

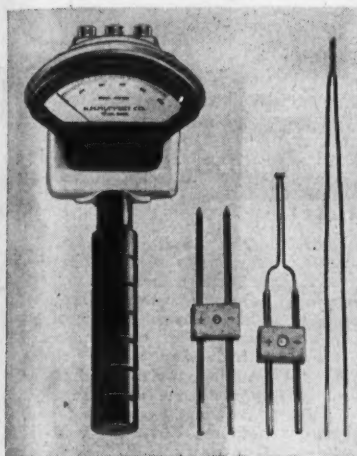
HARRY W. DIETERT CO.

9330 ROSELAWN AVE., DETROIT 4, MICHIGAN

SAND • MOLD • MOISTURE • SULFUR • CARBON

Thermocouple is Suited to Accurate Temperature Readings

Instrument with which thermocouple is used weighs one and three-quarter pounds



Portable pyrometer and accessories

USES — Thermocouple design is especially adapted to the measurement of temperatures on hot metal, rubber or plastic surfaces.

FEATURES — Provides accurate and dependable temperature readings within 2%. Pyrometer weighs $1\frac{3}{4}$ pounds and has cast aluminum body, with the scale set at an easily read angle which prevents distortion and side reflections.

DESCRIPTION — Instrument has a grip which screws solidly into the front of the instrument. Standard duorange scales in either Fahrenheit or Centigrade are available with special scales made to order.

New design thermocouple is a closed-end type with a silver tip suitable for surface temperature measurements. Other type couples, previously available, were a closed-end style used for immersion in molten metals or hot liquids and an open-end model with hardened sharp points for prodding into the surface of hot solids. Thus the addition of the new type couple will handle most applications.

SOURCE — These pyrometer accessories are a development of K. H. Huppert Company, Dept. CP, 6830 Cottage Grove Ave., Chicago 37, Ill. . . . or for more information check CP 4323 on the handy form, pages 2 and 3.

★

"Continuous Viscosimeter," Located in Line, Measures .0008 to 800,000 Centipoises

A "continuous viscosimeter" for viscosity measurement and automatic viscosity control from .0008 to 800,000 centipoises; also a two-float model for determining all gas and vapor viscosities and liquid viscosities up to about 225 centipoises, are described in a 4-page, illustrated catalog section.

Both high and low range instruments permit instant observation of viscosity values existing in a moving fluid stream under full line pressure, literature reveals. Available in simple indicating form or arranged for continuously recording viscosity values on a 24-hr. chart. Also for controlling fluid viscosity by automatic blending or heating. Literature includes installation, diagrams, engineering data, capacities, dimensions. Catalog Section 88-D, issued by Fischer & Porter Company, Dept. CP, 8E-H, Hatboro, Pa. When inquiring specify CP 4324 on handy form, pages 2 and 3.



**Are you
LOSING MONEY
every day?**

IT may be costing you plenty not to have an accurate check on the efficiency of your major processing units. And that's what the new Taylor Integrating Flowmeters (Aneroid or Mercury) can do for you. Automatic totalizing provides you with an accurate comparison of fluid through-put to yield of finished product. In addition, these dependable instruments give accurate cost data on departmental steam consumption for heating and processing. And they detect any abnormally high steam consumption caused by faulty operation of traps or valves.

First the manometer precisely measures the rate of flow. Then the Taylor Square Root Integrator accurately totalizes the flow of liquids, and of gases and steam under constant pressure. The Integrator is easy to read through a large (2-inch) window in the case door. Dependable, synchronous motor drives counter through positive clutch without the use of ratchets. Continuous check on accuracy of calibration at any point of range. Both Oilite and ball bearings for long life. Few moving parts; permanently lubricated cam

rollers, self-lubricated bushings; positive, oil-proof counter clutch.

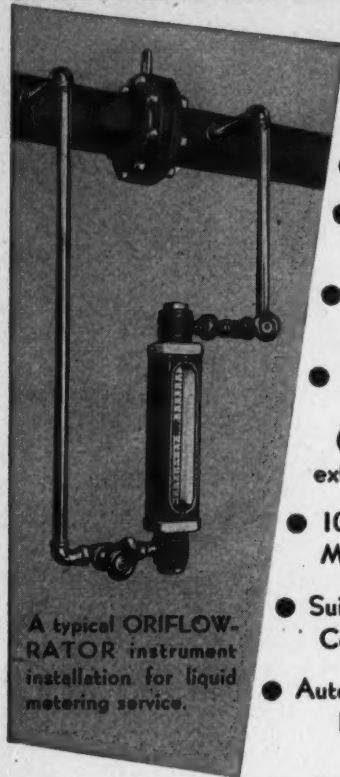
For full details, ask your Taylor Field Engineer. Also ask him about the new Taylor Aneroid (mercury-less) Manometer, with no mercury, no pivots, no stuffing box! Write for Catalog 98175. Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada. Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.

Taylor Instruments
— MEAN —
ACCURACY FIRST

IN HOME AND INDUSTRY

When inquiring check CP 4325 on handy form, pgs. 2-3

In the new **ORIFLOWRATOR**
meter Fischer & Porter
offers you an
ORIFICE METER with



A typical ORIFLOWRATOR instrument installation for liquid metering service.

- No Mercury!
(or any other manometer fluid)
- No Seal Pots!
- No Equalizing Valves!
- No Overload Problem!
- Linear Calibration Scale!
(no square root extraction required)
- 10 to 1 Accurate Metering Range
- Suitability for any Corrosive Fluid!
- Automatic Purging of By-pass Line!

For over 10 years now the FLOWRATOR meter (formerly rotometer) has been handling ever-increasing numbers of fluid metering problems for flows in pipe sizes from $\frac{1}{8}$ " to 4". Now, placed in bypass around a main line orifice the FLOWRATOR meter becomes the ORIFLOWRATOR meter and takes on the accurate wide range metering of any liquid, vapor or gas in any larger pipe size while giving you all the advantages listed above over ordinary "orifice meters". Any pressure, remote instruments actuated electrically or pneumatically, flange taps or vena contracta taps.

WRITE FOR NEW CATALOG 39-C

FISCHER & PORTER CO.
DEPT. 8N-9E HATBORO, PA.

FLOWRATOR
TRADEMARK

When inquiring check CP 4326 on handy form, pgs. 2-3

Process Instrumentation

Detector Shows Presence of Flammable Vapors

Operates signal lights or controls, when concentration of vapor reaches hazardous condition



Flammable vapor detector

USES — Designed for the prevention of fires and explosions in chemical processing plants where flammable vapors may concentrate... either as a danger inherent in the processing, storage or handling operations, or through accident or carelessness.

FEATURES — Continuous sampling of the atmosphere is effected

automatically — either by direct sampling or by draw-off. There are no glowing filaments.

DESCRIPTION — Unit consists of one or more detector cells, placed at strategic points within any enclosed area where flammable vapors might accumulate, and an instrument control case — located at any desired distance from the cell or cells.

Current through the detector is influenced by the percentage of flammable vapor in the atmosphere sampled. Whenever this fraction reaches a predetermined percentage of the lower explosive limit of the vapor, the relay in the instrument is actuated. Signal lights flash, and other alarms or safety controls may be operated automatically. Failure of current or of any element in the mechanism also actuates the alarm circuit. Dial for continuous indication of concentration of vapor in the air mixture, showing the percentage of lower explosive limit, can be furnished.

Standard vapor detector instruments operate on 100-120 volt, 60-cycle A. C., but special units for other voltages and frequencies or for D. C. are available. Models are also available for fixed installation or for portable use.

SOURCE — Bulletin 33R2 describes this development of Jabez Burns & Sons, Inc., Dept. CP, Eleventh Ave. at 43rd St., New York 18, N. Y., or for more information check CP 4327 on the handy form, pages 2 and 3.

★

Snubber Employs Porous Stainless Steel Element

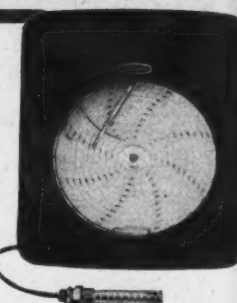
Standard unit handles differential pressure up to 500 psi; others available for ratings up to 500 psi

USES — Snubber can be used to protect all types of pressure-sensitive instruments against pulsation and shock; to filter small quantities of fluids; as a metering device; and to confine mercury in manometers.

FEATURES — Porous stainless filter disc used in the snubber provides a relatively large filter surface which effectively prevents clog-up in pressure gauge service.

DESCRIPTION — Snubber eliminates pressure gauge

Now...
DIRECT READINGS
of dew point
without
lifting a finger



THE NEW
Foxboro Dew Point Recording System

● Here is a newly-developed instrument especially suitable for moisture measurement or control in cabinets, dryers, dehydrators, air conditioning and similar equipment. It gives direct recordings of dew point from -20°F. to $+160^{\circ}\text{F.}$ at working temperatures from -20°F. to $+200^{\circ}\text{F.}$ Also permits readings in absolute or relative humidity when dry bulb temperature is known.

This new system is the only one of its kind. Requires no water connections or high velocity air-flow. Employs unique Dewcel bulb that neither adds nor removes atmospheric moisture, and can be installed directly in ducts or cabinets. Investigate Foxboro Dew Point Systems for your purposes. Write The Foxboro Company, 190 Neponset Ave., Foxboro, Mass., U.S.A.

FOXBORO

HUMIDITY INSTRUMENTS

When inquiring check CP 4328 on handy form, pgs. 2-3



EQUIP IT TO
"GROW GRACEFULLY"
ON KEWAUNEE'S
"UNIT ASSEMBLY PLAN"

Experiment
in YOUR LABORATORY NOT with IT!

Take the "experiment" out of laboratory planning by installing Kewaunee Laboratory Furniture, Cabinets and Casework. Simply select the units you need—all match exactly and are interchangeable, permitting your laboratory to "grow gracefully." Made of finest materials... all working surfaces of KemROCK for resistance to acids, alkalis, abrasion and shock. Modernize efficiently—the Kewaunee way. For details—

WRITE: INDUSTRIAL DIVISION

Kewaunee Mfg. Co.

C. G. Campbell, President

5011 S. Center St., Adrian, Mich. • Representatives in Principal Cities

When inquiring check CP 4329 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

Process Instrumentation

fluctuations caused by pressure pulsation and vibration. By smoothing out pressures they cause gauge to indicate steady average pressures, protect the indicator mechanism against undue shock and wear, and at the same time, permit accurate indication of changes in pressure.

Design permits easy installation. Specially designed

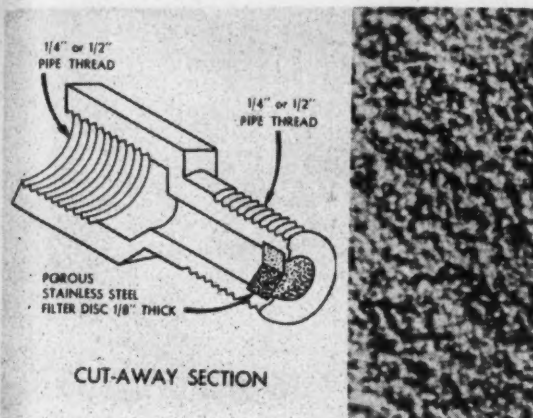


Illustration shows construction of pressure snubber filter discs are available for air, oil, water, mercury, etc. SOURCE — Product of Equipoise Controls, Inc., Dept. CP, 100 Stevens Ave., Mt. Vernon, N. Y., or for more information check CP 4330 on the handy form, pages 2 and 3.

Wand-Type Cell Measures Conductivity of Slurries and Starches

May be used as a dip cell or permanently mounted in place

USES — Type of construction employed is particularly useful where the liquid under measurement is viscous, or where there is a strong tendency for solids to deposit out and coat the electrodes.

FEATURES — Present design requires less frequent cleaning, and when required, electrode surfaces are easily cleaned.



Wand-type conductivity cell

DESCRIPTION — Type VO-1 conductivity cell has a body of acid-resistant plastic with handle at one end and flush electrodes of bright platinum, at the other. Measures 24" long by 1" O. D., and permanent mounting is provided with a bushing of 1" pipe size or larger. Electrical connections are made by means of the 15' heavy neoprene cable with spade-lug terminals.

SOURCE — Developed especially for slurry and starch applications by Industrial Instruments, Inc., Dept. CP, 17 Pollock Ave., Jersey City 5, N. J. . . . or for additional information check CP 4331 on handy form, pages 2 and 3.



"PRECISION" THELCO

Utility Laboratory Oven Offers On The Job Performance Surpassing Anything within Its Price Range . . .

The "Precision"-Thelco Model 16 all metal laboratory oven represents more than 35 years of continuous experience in building constant temperature laboratory equipment, and within its price range the Thelco model 16 has no equal.

The many features pioneered by "Precision" such as double walled cabinet and door, glass wool insulation, ventilation control, fully enclosed thermostat, adjustable shelves, are in most instances, still exclusive "Precision" features and offer operating advantages that save time through greater accuracy and efficiency.

Those laboratories with particularly limited equipment budgets, or where a general purpose oven is needed in addition to the regular oven equipment, will find the "Precision"-Thelco Model 16 the ideal oven.

Write for
"Precision"-Thelco
Bulletin No. 475-D

Purchase From Your Laboratory Supply Dealer

Precision Scientific Company

3737 WEST CORTLAND STREET CHICAGO 47, ILLINOIS, U.S.A.

Scientific Research and Production Control Equipment

When inquiring check CP 4332 on handy form, pgs. 2-3

these **ELECTRONIC** stainless steel **FINGERS**

Step Up Production
Reduce Waste and Loss

BY MAINTAINING
Exact liquid levels in
containers.

THUS
PREVENTING
Overflow or draining of
tanks or boilers; Air
binding process pumps;
Burning out boiler tubes
or Processing pots; Water
contamination, etc.

Faratron Liquid Level Controls

Sanitary — Dependable — Accurate
Just two polished stainless steel rods
in the vat, tank, boiler, processing
kettle, freezer, pasteurizer etc., to con-
trol signals or operate valves at any
pre-set level. Constantly on duty—
need no servicing—and are easy to
install.
If you have any liquids—hot or cold—with
or without foam—in any type of container—
to control, you should have our Bulletin 482.
Write for it today.

TO
PUMP
MOTORS—
MOTORIZED
VALVES—
SIGNAL
BELLS or
LIGHTS—
Etc.

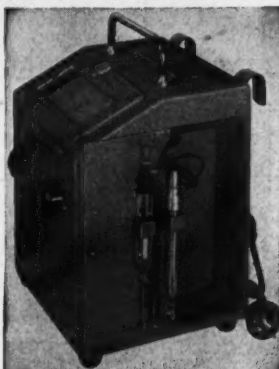
Lumenite Electronic Company

407 S. Dearborn Street Chicago 5, Ill.

When inquiring check CP 4333 on handy form, pgs. 2-3

NEW **CAMBRIDGE** INDUSTRIAL MODEL DIRECT READING **pH METER**

- Operated from any AC outlet.
- Completely portable. Weighs only 10 lbs. Electrodes are integral parts of the instrument.
- Accurate to .10 pH.
- Shielded glass electrodes permit use of electrodes at any distance from the instrument.
- May be used on a bench or wall mounted.



- Self contained in one metal case including electrodes and buffer solutions.
- Extremely stable.
- Automatic temperature compensation.

Send for bulletin 910 I

Also available: Electron-Ray Research Model accurate to .02 pH and Laboratory Model accurate to .05 pH and Single- and Multi-point recorders.

CAMBRIDGE INSTRUMENT CO., INC.

3706 GRAND CENTRAL TERMINAL NEW YORK 17, N. Y.

Pioneer Manufacturers of

PRECISION INSTRUMENTS

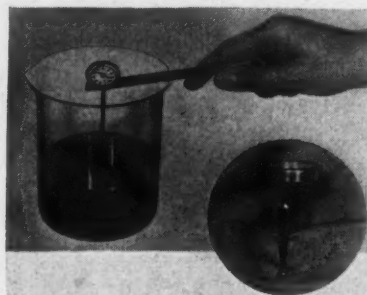
When inquiring check CP 4334 on handy form, pgs. 2-3

Page 44

Process Instrumentation

Pocket Thermometer Ready for "on-the-spot" Readings

Available in four ranges, 0-220° F., 50-500° F.,
0-150° C., or 0-250° C.



Dial type pocket thermometer

All metal construction of corrosion resistant stainless steel assures dependable service.

DESCRIPTION — This thermometer has a stem 1/8" in diameter and 5" long. Dial is one inch in diameter and is protected by an unbreakable plastic crystal.

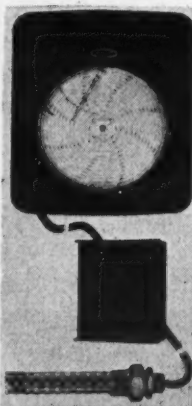
This pocket unit is furnished complete with a plastic casing equipped with a strong clip. A hole is drilled diametrically through this casing, permitting its use as a holder and preventing burned fingers when used over hot vapors. Besides pocket use, it may be readily mounted in various permanent installations.

SOURCE — This is a Weston product offered by Scientific Glass Apparatus Co., Inc., Dept. CP, 49 Ackerman St., Bloomfield, N. J. . . or for more information check CP 4335 on the handy form, pages 2 and 3.

★

Dew Point Recorder Requires No Refrigeration or Water Supply

Continuous record of dew point available for ranges
of -20° F. to +92° F. and 36° F. to 160° F.



Foxboro dew point recorder

9" long and 2" diameter. Within is a central tube con-

USES — Instrument is useful for chemical processing plants, storage rooms, refrigeration, dryers, air conditioning and other applications where the measurement of dew point is vital to processing.

FEATURES — Sensitive cell used for moisture determination is called a Dewcel. In operation it requires no refrigeration, water supply, or air circulating system, and no mirrors to keep clean.

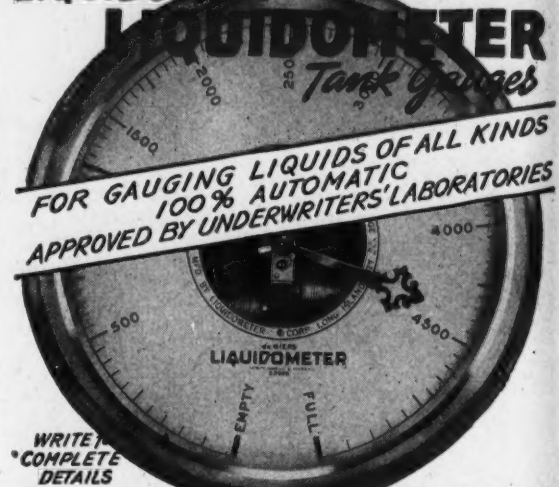
Dewcel can be installed anywhere, indoors or outdoors. Recording instrument can be mounted in a control panel as much as 600 feet from the Dewcel.

DESCRIPTION — Measuring element has the appearance of a perforated metal cylinder about

USES — This small thermometer is suitable for routine temperature checks or for permanent installations.

FEATURES — Accuracy 1/2 of 1% of the entire scale range. Figures on the clearly calibrated scale are easy to read.

COSTLY HUMAN ERRORS ELIMINATED WHEN YOU MEASURE VALUABLE STORED LIQUIDS



WRITE FOR COMPLETE DETAILS

"LIQUIDS WORTH STORING ARE WORTH MEASURING"

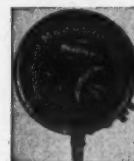
THE LIQUIDOMETER CORP.
38-18 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

When inquiring check CP 4336 on handy form, pgs. 2-3

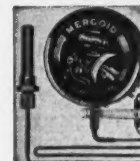


FOR HEATING, AIR CONDITIONING, REFRIGERATION, AND INDUSTRIAL APPLICATIONS

The acceptance of Mercoïd Controls is universal. The reason is based on their record for dependable operation and long service. They are easy to install, adjust, and require practically no attention. The hermetically sealed mercury switches used in all Mercoïd Controls are dust, dirt and corrosion-proof, thus assuring positive performance under all operating conditions.



Pressure Control—For various industrial applications. The operating range is plainly indicated on a visible dial. Adjustments are easily made.



Temperature Control—For numerous applications. The operating range is plainly indicated on a visible dial. No guesswork—easy to adjust.

See catalog No. 600 for complete information on all types of Mercoïd Controls.

THE MERCOÏD CORPORATION
4229 West Belmont Avenue, Chicago 41, Illinois

When inquiring check CP 4337 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

taining the thermal bulb wrapped with a saline-saturated woven glass tape and two windings of silver wire, to conduct the heating current.

Moisture determination by the Dewcel is based on the fact that for every water vapor pressure in contact with a saturated salt solution there is an equilibrium temperature at which the solution neither absorbs nor gives up moisture to the atmosphere. Function of the variable heat supply is to bring the Dewcel to this equilibrium temperature. This temperature, measured by the thermal bulb, is transmitted to the recording instrument, and is read on the chart in degrees of dew point temperature. Recording is continuous. Various standard chart ranges are available, two of the most common being -20°F . to plus 92°F . dew point and 36°F . to 160°F dew point.

Two types of recorders are offered, both of standard design. One is the Dynalog all-electronic instrument; the other is the liquid-filled system type, in the round-form case.

Pneumatic or electric control systems, for the operation of valves, dampers or motors, can be supplied in either instrument.

Recorders and controllers are illustrated and fully described in Bulletin 407.

SOURCE — Made by The Foxboro Company, Dept. CP, Foxboro, Mass. . . . or for more information check CP 4338 on handy form, pages 2 and 3.

★

Instrument Measures Surface Roughness

Applications include calendered rubber sheet and similar materials



Surface roughness meter

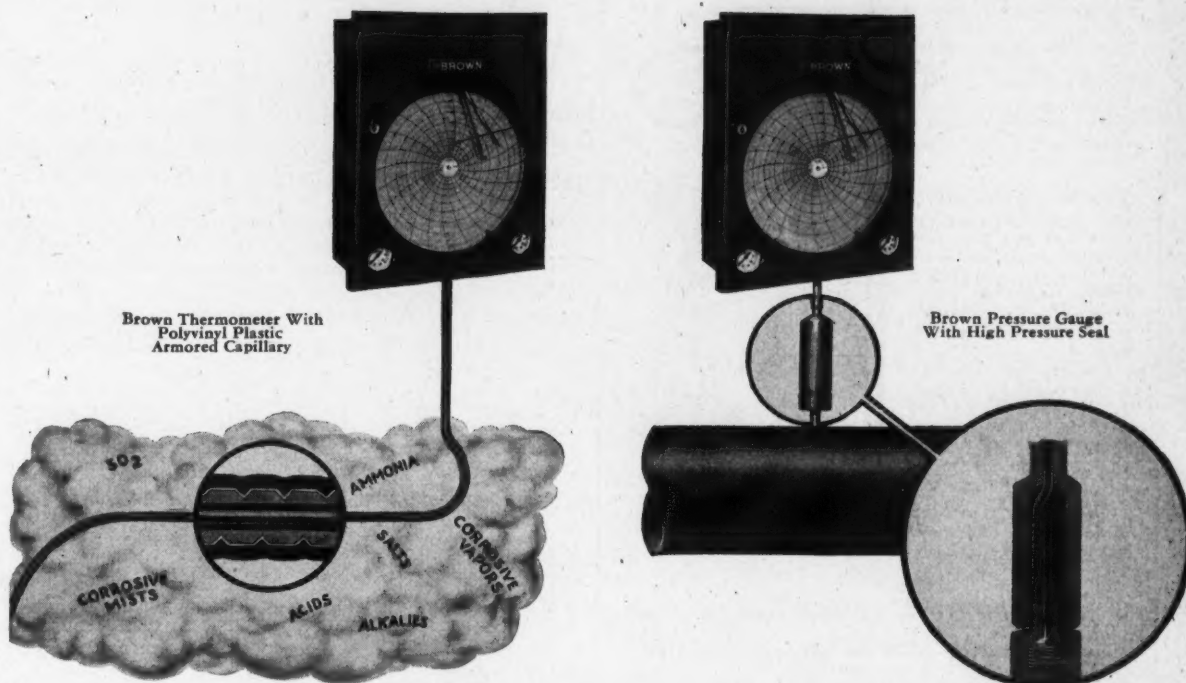
Apparatus consists essentially of the following elements in series: a constant-pressure air valve, a large needle valve with a calibrated scale, a manometer and an annular test plate. Needle valve is opened to the point at which the pressure on the manometer is one-half the pressure maintained by the constant-pressure valve. The resistance of the needle valve to the air flow is then equal to and measures the resistance of the test plate on the sample.

SOURCE — This Rugosimeter is a product of Precision Scientific Company, Dept. CP, 3737 W. Cortland St., Chicago 47, Ill. . . . or for more information check CP 4339 on the handy form, pages 2 and 3.

USES — Rugosimeter is designed to measure the rugosity or surface roughness of calendered raw rubber sheet or similar samples.

DESCRIPTION — Measurement made is essentially the resistance to flow of air between the rough surfaces and an annular test plate which rests upon the surface under the test.

Getting along in bad company



Survival of the fittest certainly applies to industrial instruments. Though precision instruments in every sense, they must withstand a collection of corrosive conditions that would rival the proverbial Hades.

Every Brown Thermometer and Pressure Gauge is protected against the usual tough conditions in Industry. You'll find that they stand up well and give performance even beyond normal expectations.

When the going gets too rough, the Brown Field Engineer has a number of strong-arm tools for use on extra tough applications.

A polyvinyl plastic covered capillary on thermom-

eter systems will ward off a whole array of enemies to metal. Likewise, high or low pressure seals with the proper sealing medium will protect the delicate elements of a pressure gauge against most corrosive attacks.

These "little" considerations in design and application of instruments are why users have come to expect better and longer performance from Brown.

**THE BROWN INSTRUMENT CO., 4421 WAYNE AVE., PHILADELPHIA 44, PA.
DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR CO.**

Offices in principal cities of the United States, Canada and throughout the world.

BROWN

Advanced Instrumentation
FOR BETTER PROCESSING

**MINNEAPOLIS
Honeywell**

When inquiring check CP 4340 on handy form, pgs. 2-3

KECKLEY

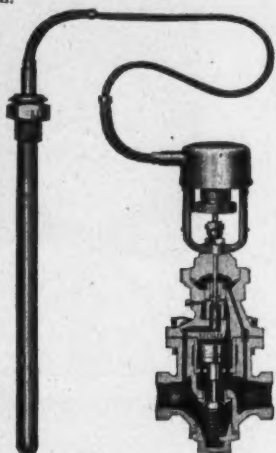
TYPE AT • TEMPERATURE REGULATOR

The Type AT Temperature Regulator is recommended for installations where a wide temperature range and dead-end service is desired. Slight change in temperature at regulator bulb causes the metal seamless bellows to operate Unit Pilot Valve, admitting steam to the Piston which opens Main Valve.

This Temperature Regulator is basically the same design as our Precision Pressure Regulator with addition of operating bellows and bulb. Regulator can be easily adjusted for any temperature.

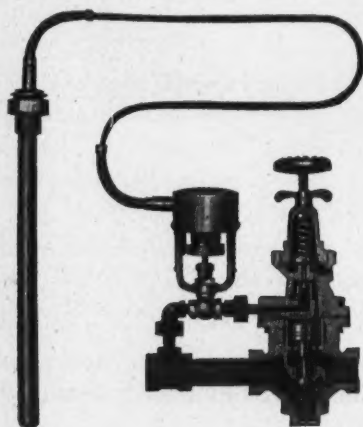
STAINLESS STEEL UNIT PILOT VALVE, MAIN VALVE AND SEAT, BRONZE BODY, COPPER BULB AND BRASS FITTINGS.

The armored tubing is 8 ft. long; longer lengths furnished.



TYPE PTT — COMBINATION PRESSURE AND TEMPERATURE REGULATOR

THE TYPE PTT REGULATOR is a combined Pressure and Temperature Regulator which not only reduces high initial pressures to any desired reduced pressure but also maintains a definite temperature of the liquid being heated, eliminating the necessity and expense of installing both a Pressure and Temperature Regulator.



Write today for Descriptive Bulletin No. 48.

O. C. KECKLEY COMPANY

400 W. MADISON STREET

CHICAGO 6, ILLINOIS

When inquiring check FP 4341 on handy form, pgs. 2-3

Page 46

Process Instrumentation

Lubricants from Polyalkylene Glycols

Properties and uses of several series of "Ucon" fluids and lubricants are revealed in a 20-page booklet. These are polyalkylene glycols and derivatives useful for general industrial lubrication, and hydraulic applications. Literature is illustrated with drawings and tabular data. Form 6500, issued by Carbide and Carbon Chemicals Corporation, Dept. CP, 30 E. 42nd St., New York. When inquiring specify CP 4342 on handy form, pages 2 and 3.

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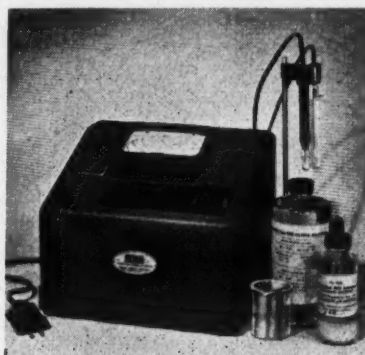
A-C Generator Features Automatic Constant Voltage Without Moving Regulator Parts

"How to Apply Packaged A-C Generators" which feature built-in, automatic, constant voltage without moving regulator parts is told, with 7 handy tables for generator and wire selection, in 16-page manufacturer's publication. "Synchronizer," Vol. 8, No. 3a, issued by Electric Machinery Mfg. Company, Dept. CP, 821 Second Ave. S. E., Minneapolis 14, Minn. When inquiring specify CP 4343 on handy form, pages 2 and 3.

★

AC Glass Electrode pH Meter

Plugs into standard 110-volt 50/60 AC cycles;
accurate to 0.03 pH unit and 2 millivolts



Glass electrode pH meter

in presence of sodium ions, direct immersion in sludges.

FEATURES — Designed to assure correct pH readings without calculations or reference to pH-temperature charts. Quickly checked and corrected for drift.

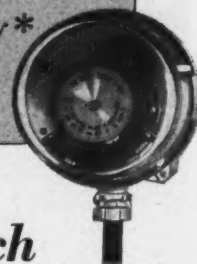
DESCRIPTION—Standardization with one buffer gives accurate measurements over full range, eliminating cross-checking. Check and correction for drift is made by pressing button on electrode terminal and bringing needle to pointer position with standardization control. Built-in temperature compensator dial is calibrated to 100° C., and can be set at temperature of test sample. This automatically adjusts measuring current to compensate for effect of temperature on EMF of glass electrode. Changes in circuit constants are about 0.1 pH unit in first hr., negligible thereafter.

Glass electrodes are internally shielded, with integrally attached shielded leads. Various types, shapes and sizes are available. Unit has 35 watt power consumption, and is furnished complete with electrode support rod,

USES — Portable AC glass electrode pH meter for making millivolt readings within range of 0 to plus 410 millivolts, and for standard pH use. Interchangeable electrodes permit use for various operating requirements such as high temperatures, high pH

to save money*
... save time

use this
time switch



*Increase your profits by eliminating waste, and reducing costs with a General Electric TSA-14 automatic time switch. This dependable time switch is easily installed and adjusted. Its automatic cyclic action frees your operators for more productive work, often doubles output.

FOR DEPENDABLE OPERATION OF . . .

Pumps
Ovens
Signals

Agitators
Flushing signs
Mixing valves

Blowers
Exhaust fans
Lights

It also has many other industrial applications like allowing motors to slow down before reversing, or dipping materials at certain intervals.

The weather-resistant case safely houses a reliable Telechron motor which ensures accurate operation for years. The low installation and maintenance costs further increase your savings. Bulletin GEA-2963 will give you more details. Write for your copy today. Apparatus Dept., General Electric Company, Schenectady 5, N. Y.
†Reg. U. S. Pat. Off.

GENERAL ELECTRIC

When inquiring check CP 4344 on handy form, pgs. 2-3

Combines the two

RELIABILITY
readability

WESTON
all-metal
THERMOMETERS

The legible, wide open scale on the WESTON thermometer permits you to take full advantage of its inherent, long-time accuracy. Even from a distance, readings can be made "right on the nose." WESTON thermometers are available in a variety of types, stem lengths and scale ranges for most industrial applications. If your jobber cannot supply you, see your local WESTON representative, or write for Thermometer Bulletin . . . Weston Electrical Instrument Corporation, 618 Frelinghuysen Avenue, Newark 5, New Jersey.

MAX-MIN models also available to indicate highest or lowest temperature reached.

WESTON

Instruments

When inquiring check CP 4345 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

Process Instrumentation

electrode holder, glass electrode, calomel electrode, pint of pH 7.00 concentrated buffer, 100 ml saturated KCl solution and 50 ml Pyrex beaker. Model H.

SOURCE — Product of National Technical Laboratories, Dept. CP, 820 Mission St., South Pasadena, Calif. . . . or for more information check CP 4346 on handy form, pages 2 and 3.

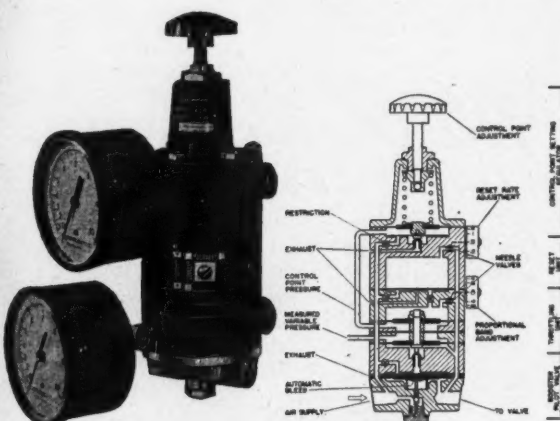
Controller Operates on Pneumatic Force-Balance System

Unit is actuated directly from process transmitter

USES — Unit is suitable for temperature, pressure, flow, liquid level, specific gravity, and all control applications in which pneumatic transmitters can be used as primary elements.

FEATURES — Manufacturer points out that controller operates directly from the process transmitter, and sends an output pressure to the control valve without introducing frictional errors, with their resulting dead-spot and controller lag. Control action is completely independent of the operation of the indicator or recorder, because these units are outside the control circuit.

DESCRIPTION — Control-point setting is air-pressure loading, eliminating mechanical linkages and permitting accurate adjustment. Remote control-setting can be supplied.



Moore Nullmatic controller

When desired, a separate diaphragm-type derivative unit may be used to superimpose a rate action on the controller output. Either the throttling or the reset section can be removed when either of these functions is not required. Needle valves which provide these adjustments are of the spring-release type, removable as complete assemblies.

A reversing plate is included by which the measured-variable and the control-point pressures may be interchanged, in order to reverse the output pressure to the diaphragm valve. Calibrated gauges are furnished to show control-point setting, process measurement, valve pressure, and supply pressure.

SOURCE — Manufactured by Moore Products, Co., Dept. CP, H & Lycoming Sts., Philadelphia 24, Pa. . . . or for more information check CP 4347 on handy form, pages 2 and 3.

MARCH, 1948

Rapid Titration with No Nerve-Racking Manipulation

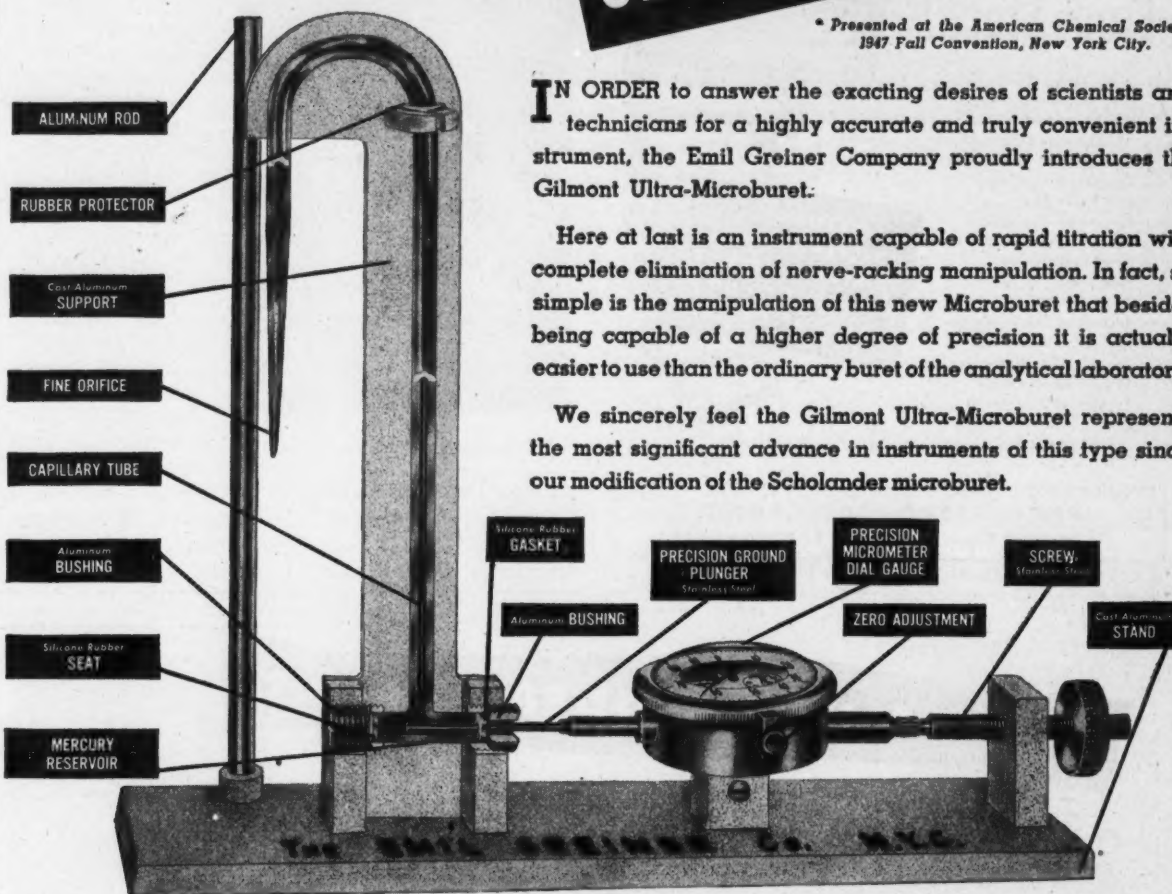
The GILMONT* ULTRA-MICROBURET

* Presented at the American Chemical Society
1947 Fall Convention, New York City.

IN ORDER to answer the exacting desires of scientists and technicians for a highly accurate and truly convenient instrument, the Emil Greiner Company proudly introduces the Gilmont Ultra-Microburet.

Here at last is an instrument capable of rapid titration with complete elimination of nerve-racking manipulation. In fact, so simple is the manipulation of this new Microburet that besides being capable of a higher degree of precision it is actually easier to use than the ordinary buret of the analytical laboratory.

We sincerely feel the Gilmont Ultra-Microburet represents the most significant advance in instruments of this type since our modification of the Scholander microburet.



G15390 Ultra-Microburet Titration Assembly (Direct Reading)\$60

Delivered filled with mercury and ready
for operation (instructions included)

TOTAL DISPLACEMENT 0.1 ML.
EACH DIVISION 0.0001 (1/10,000) ML.
ACCURACY 0.03% OF TOTAL DISPLACEMENT

Constructed entirely of corrosion-
resistant materials

G15392 SET OF CLAMPS AND ATTACHMENTS.....\$10 (not illustrated)

Includes: 3 UNIVERSAL MICRO CLAMPS
1 CLAMP FOR TWO TEST TUBES
1 CLAMP FOR BUBBLING TUBE (STIRRER)
1 BUBBLING TUBE
1 MILK GLASS AND HOLDEN
1 RUBBER BULB, CONSTANT PRESSURE,
AND PINCHCLAMP (Caustic Bulb Set)

Microburets for total displacements of 1 ML. (in 1/1,000 ML.) or
0.01 ML. (in 1/100,000 ML.) available on special order. Infor-
mation and prices on request.

Branch Offices: 112 Broadway, Cambridge, Mass. • 5709 Grove Street, Oakland, Calif. • 90 State Street, Albany 7, N. Y.

How the Microburet Functions

A precision ground plunger displaces mercury in a reservoir sealed off by a silicone rubber gasket contained in an aluminum bushing. The displaced mercury in turn forces a precisely determined amount of titrating solution through the fine orifice immersed in the solution being analyzed.

The diameter of the plunger is ground to the required size so that the precision dial micrometer gauge reads directly in volume units. The mercury reservoir

is made as small as possible so that temperature fluctuations are made as negligible as in ordinary macro titrations. Back diffusion into the capillary tube has been found to be practically eliminated by virtue of the fine orifice. Stirring of the solution may be effected by a fine stream of air bubbles.

The above principle of operation eliminates errors in drainage and meniscus reading enabling easy manipulation and high precision to be obtained.

The EMIL GREINER Co.

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When inquiring check CP 4348 on handy form, pgs. 2-3

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- Air-Operated Thermometer Controllers
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- Pyrometer Controllers (Electric and Air-Operated)
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Write for Stock Instrument Bulletin 1811

THE BRISTOL COMPANY

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When inquiring check CP 4349 on handy form, pgs. 2-3



Process Instrumentation

Hand-Held Electric Tachometer Weighs Three Pounds

*Measures rotational speeds from 100 to 10,000 rpm
and linear speeds from 10 to 10,000 fpm*



Hand-held electric tachometer

USES — Tachometer may be used for measuring rotational speeds of motors, generators, turbines, and engines; and linear speeds of conveyor belts or other moving machinery.

FEATURES — Accurate speed indications are assured by a low driving torque of only 1/4 ounce-inch. Instrument cannot be damaged by over-speeding.

Speed ranges can be changed while the spindle is rotating because there is no gear transmission to shift for various speed ranges.

DESCRIPTION — Instrument consists of two units . . . the head, which is placed in contact with the moving

object, and the indicating unit to which the head is attached by a flexible electric cable.

Vibration from the rotating machine does not affect the reading or make the instrument difficult to read. Measures both clockwise and counter-clockwise rotation. Furnished with a carrying case.

Using accessories, rotational speeds from 100 to 100,000 rpm may be measured.

SOURCE — Bulletin GEA describes the unit which is a product of General Electric, Dept. CP, Schenectady 5, N. Y. . . or for more information check CP 4351 on the handy form, pages 2 and 3.

Instrument Combines Titration and pH Measurements

Dial has 7 inch scales, two for titration readings; one from 0 to 0.1 volt, and the other from 0 to 0.5 volt

USES — Instrument is designed for the measurement of pH and titrations.

FEATURES — Controls and adjustments are located on the front panel for convenience in use. Balanced electronic tube circuit employs vacuum tubes especially aged and selected for trouble-free operation and long life.

DESCRIPTION — For titration use two ranges are available for accurate control of neutralizations, oxidation reduction reactions, and precipitations.

A meter polarity switch makes it unnecessary to change

NOW A NEW, MODERN PLANT



... to give you still better pressure gauges and dial thermometers

A growing volume of production—the reward for making ever-better instruments—has called for this new Marsh plant near the North edge of Chicago in Skokie, Illinois. Building anew, but with 80 years of precision instrument-making to guide us, we have put into this new plant everything available to heighten the methods and craftsman-

ship that have made Marsh Gauges and Dial Thermometers "The Standard of Accuracy."

Yes, the finest of instruments are being made still better in this new plant. There is a Marsh Gauge or Dial Thermometer for every process. Ask for information covering your particular pressure or temperature problems.

JAS. P. MARSH CORPORATION, Dept. R, Skokie, Illinois

Marsh Diaphragm Gauge — typical of many special types for process plants.

Remote reading dial thermometers and recorders; also rigid stem types, both bourdon tube and bimetallic types.

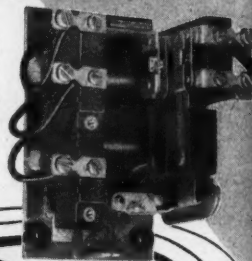


MARSH
PRESSURE GAUGES
DIAL THERMOMETERS

When inquiring check CP 4350 on handy form, pgs. 2-3

All Electric Floatless LIQUID LEVEL CONTROLS

Positive! Dependable!
Economical! No floats!
No vacuum tubes! No
moving parts in liquid.
Unaffected by acids,
caustics, pressures or
temperatures.



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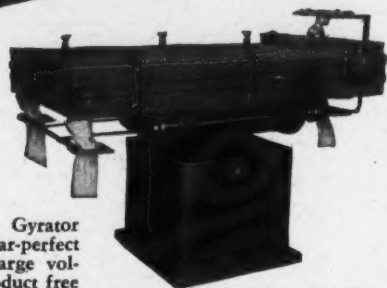
FIRST IN THE FLOATLESS CONTROL FIELD

When inquiring check CP 4352 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

Schutz O'Neill GYRATOR SIFTER

For sifting
SPICES, DRUGS,
HERBS, CHEMICALS,
and hundreds of
other ground
materials.

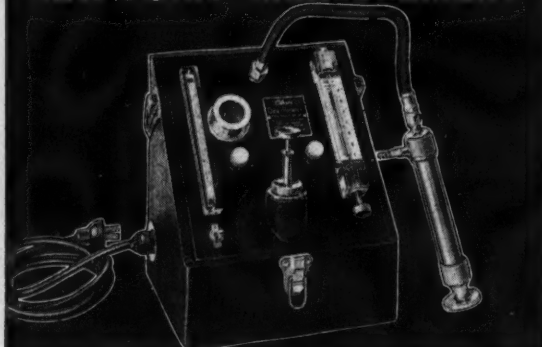


A Schutz-O'Neill Gyrator Sifter delivers a near-perfect separation and a large volume of uniform product free from tailings, fibre, shreds or foreign particles. The continuous whirling motion of the material on the sieve's surface produces this clean separation. Built with one to three sieve frames, the Gyrator Sifter will deliver up to four grades of product. Sieve meshes are kept free from clogging, are quickly removable, and can be thoroughly cleaned in a few minutes for grinding a different product. Very light running — requires only 1 to 2 H.P. motor. Let us Suggest a MILL PLAN — Write us your requirements, send sample of products to be sifted or pulverized and output desired, and our engineers will recommend the correct equipment at no obligation.

ESTABLISHED 1893
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303 SIXTH AVENUE SOUTH,
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When inquiring check CP 4353 on handy form, pgs. 2-3

FASTEST, MOST ACCURATE DEW POINT MEASUREMENT



with the **ALNOR** Dewpointer!

EXCLUSIVE
ALNOR
ADVANTAGES

- No external coolant required! True portability and convenience.
- Dew or fog is observed suspended in air—not on a polished surface! Two or more observers get same accurate results!
- Greater speed in measurement!
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Send for details and prices! Address Illinois Testing Laboratories, Inc.
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Alnor PRECISION INSTRUMENTS
FOR EVERY INDUSTRY

When inquiring check CP 4354 on handy form, pgs. 2-3

MARCH, 1948

Process Instrumentation

connections to the electrodes if the polarity of the solution potential is reversed. In use, electrodes are connected to the instrument and titrations continued until the end point is indicated by a sudden jump of the meter pointer.

For pH measurement, the electrodes are lowered into a standard buffer solution and the meter adjusted to that pH by means of the "pH adjust" control on the front of the panel. Electrodes are then raised, carefully rinsed and placed in the unknown solution. When removing the electrodes from a solution, the control knob is turned to "pH hold" which prevents the pointer from swinging off scale. pH of the unknown solution is read directly from the meter scale. Readings can be estimated to 0.02pH. Readings are continuous through the neutral point; no reversal is necessary.

A temperature compensation control permits accurate pH measurements from 0° to 100°C. and is located on the front panel. Circuits employed in the meter permit making measurements in grounded tanks.

SOURCE — Meter is manufactured by Central Scientific Company, Dept. CP, 1700 Irving Park Road, Chicago 13, Ill. . . . or for more information check CP 4355 on the handy form, pages 2 and 3.

★

Potentiometer Has Automatic Reference-Junction Compensator

10 models available for use with copper-constantan, iron-constantan or chromel-alumel thermocouples



Temperature-calibrated potentiometer

tion and the automatic reference-junction compensator at substantially equal temperatures, irrespective of changes in the ambient temperature.

DESCRIPTION — This is a new series of direct-reading temperature-calibrated portable potentiometers, for use with copper-constantan, iron constantan or chromel-alumel thermocouples.

Ten standard catalog models are calibrated over a wide range of temperatures. Four models are listed with Rubicon high-sensitivity multiple-reflection "Pointerlite" galvanometers affording substantial improvement in sensitivity over that previously available on low temperature ranges.

SOURCE — This line of potentiometers is made by the Rubicon Company, Dept. CP, 3696 Ridge Ave., Philadelphia 32, Pa. . . . or for more information check CP 4356 on the handy form, pages 2 and 3.

USES — Potentiometer is useful in the chemical processing field where the measurement of small temperature differentials is of interest.

FEATURES — Accuracy in keeping with the high sensitivity is assured by special structural features which maintain the thermocouple reference-junction

This practical test for
SURFACE WEAR RESISTANCE
...provides the facts in minutes



The **TABER ABRASER** is easy to operate
... gives a permanent, accurate rating

Duplicating—in measurable terms—the rubbing abrasion encountered in actual service, the Taber Abraser enables you to determine in advance the inherent surface wearability of paints, lacquers, plating, textile, leather, rubber, metals and many other materials. Saves time required for wear performance tests—gives a permanent, accurate value rating for research studies as well as for production control.



YOURS on request—Manual explaining fully the Taber Method and the reasons why it pays to pre-test. (Also included—brochure on stiffness and resilience testing with the Taber V-5 Stiffness Gauge.)

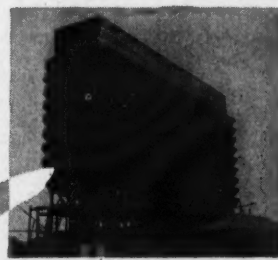
TABER INSTRUMENT CORP.
106 Goundry St., North Tonawanda, N.Y.

The Taber Test Proves What Wears Best!

When inquiring check CP 4357 on handy form, pgs. 2-3

COOLING TOWERS (Mechanical, Atmospheric, Cylindrical) WOOD TANKS • WOOD PIPE • MULTI-FIT UNITS

Check Your Temperatures!



Incorrect temperatures may be affecting the cost of your products. you can maintain the proper cooling balance with **SANTA FE** Cooling Equipment. Since 1909 a pioneer in Cooling Equipment design and construction, our engineers are specialists in solving your cooling problems.

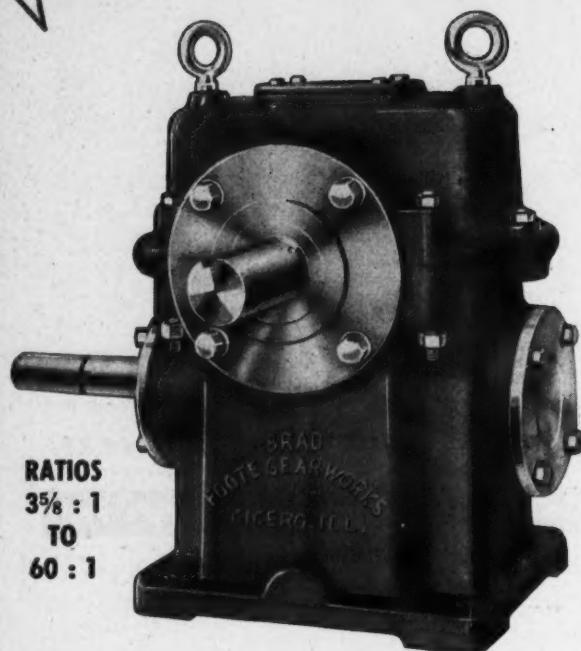
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A WORKING CREED **The Will to do RIGHT** **43 YEARS OLD**

SANTA FE TANK & TOWER COMPANY

When inquiring check CP 4358 on handy form, pgs. 2-3

WORM GEAR SPEED REDUCERS



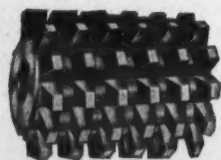
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35 : 1
TO
60 : 1

CAPACITY Production with

Brad Foote Gears

700 STANDARD WORM HOBS!
In Stock Ready for Use

Get our 12 page Bulletin
No. 9 showing all dimen-
sions in detail. These hobs
are not for sale, being solely
for customer use.



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Worm Hob List
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BRAD FOOTE GEAR WORKS

1309 S. Cicero Ave., Cicero, Ill.

When inquiring check CP 4359 on handy form, pgs. 2-3

Page 50

Briefs . . . from contemporary publications

Here's a quick look at interesting articles appearing in other publications

. . . as selected by Technical Editor, H. McCormack

Vapor-Liquid Equilibria in Hydrocarbon Systems

A practical working procedure for obtaining vapor-liquid equilibria in hydrocarbon systems from low pressures up to the converging pressure of the system is described in this 17 page article. Principal correlations include 3 monograms for ideal equilibrium-vaporization constants, K's from —200° F. to plus 1000° F. in pressures from 10 to 2000 lbs. sq. in. abs.

Range of materials considered includes hydrogen, light paraffins and mono-olefins up to narrow boiling point cut at 1100° F. Correlations are presented for obtaining the deviation of the K's from their ideal values as the convergence pressure is approached.

Correlations are shown to obtain K of nonhydrocarbons either as contaminants or as process materials. Includes 17 tables and 7 figures. (From "Chemical Engineering Progress", January 1948)

★

Flammability of the Higher Boiling Liquids and Their Mists

The 7½ page article covers an investigation as to the inflammability of higher-boiling organic compounds including petroleum derivatives. Explosive hazard due to fine droplets in air was of particular interest.

A new apparatus was devised for the measurement of the flammability of oil mists and used in studying this characteristic of 7 petroleum base oils, of 17 hydrocarbons, chiefly chlorination products, 13 organic phosphates, carbonates, etc., and 18 silicone fluids.

Apparatus used is described and illustrated in a photograph and 1 drawing. Operating technique is fully described. Six tables of results are included. (From "Industrial & Engineering Chemistry", December 1947)

★

Molds Cleaned by Power Brushing

The numerous advantages of this type of mold cleaning are enumerated which include: molds can be cleaned on the press; brushing operation conditions the metal surface of the mold; cleaning may be done while the mold is hot.

Other uses for the power brush are mentioned such as cleaning the surface of fabric liners and the interior of latex drums. This 1 page article is illustrated with 1 photograph. (From "Rubber Age", December 1947)

★

Filler for Phenolics

Article comments on the important functions of the filler in phenolic molding.

Basic requirements for filler, exclusive of those depending on end use, are tabulated. Less tangible requirements are listed and commented on.

Various filler types are tabulated and characteristics of each material are tabulated. Also shown are the effects of the organic fillers on impact strength as well as properties of phenol-formaldehyde molding powders. Industrial de-

mands for fillers are estimated. This 5 page article includes 2 tables. (From "Modern Plastics", December 1947)

★

Better Quality — Faster Molding

A 2 page article illustrated with 4 photographs tells how the Shaw Insulator Company achieved these objectives. Points out the press changes necessary.

Improvements in material handling are described and results obtained stated. Contributions by the research laboratory in securing the desired results are indicated, both for the present and for the future. (From "Modern Plastics", December 1947)

★

Measurement of Slipperiness of Walkway Surfaces

A 1½ page article summarizes results secured by the Bureau of Standards in a study directed toward the formulation of a safety code for walkways and for footwear. A portable slipperiness tester was developed and is described.

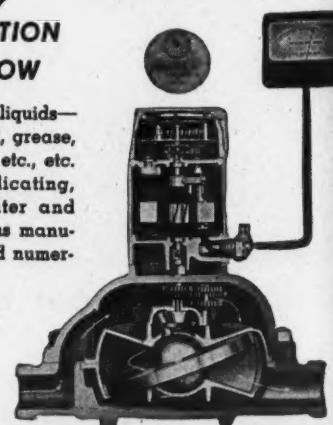
Several surfaces were studied, both wet and dry. Differences between the slipperiness coefficients of rubber heels and leather heels were noted on various surfaces. (From "Rubber Age", December 1947)

NEW HAYS VERIFLOW TOTALIZING-INDICATING METER

Featuring
REMOTE INDICATION
OF RATE OF FLOW

For practically all liquids—tar, molasses, crude oil, grease, paint, varnish, syrups, etc., etc.—for measuring, indicating, totalizing flow of water and chemicals in continuous manufacturing processes and numerous other uses. Its remote indicating feature is new—get the complete story.

SEND FOR
BULLETIN 46-766



The HAYS CORPORATION
MICHIGAN CITY, INDIANA, U.S.A.

When inquiring check CP 4359A on form, pgs. 2-3

CHEMICAL PROCESSING Preview

Pollution Abatement

116 pages including 6 photographs, 1 two-page table and bibliography comprise article for use as a guide in facing waste disposal problems and formulating solutions.

Common law, in the various states, applicable in stream solution is analyzed. Answers to a 15 point questionnaire show the legal positions of the various states.

Types of wastes are classified as most difficult to treat and as most troublesome for various states. Legal, administrative and co-operative trends are shown. Factual information has been assembled from authoritative sources. (From "Chemical Engineering Progress", January 1948)

★

Determination of Aldehydes by an Improved Procedure

A method for determining aldehydes, without difficulties of equilibrium or end point, by forming the corresponding bisulfite addition product in a sodium sulfite-sulfuric acid mixture is described in this 2 page article. Excess acid is titrated potentiometrically.

Ketones, present in quantities less than 10%, do not generally interfere. Acetals do not react and therefore do not interfere. Tabulated results show accuracy of the method. (From "Analytical Chemistry", December 1947)

★

Highly Concentrated Hydrogen Peroxide

A 5½ page article illustrated with 4 photographs, 7 tables and 5 figures relates to a 90% material. Comment is made as to its stability when free from impurities which catalyze its decomposition. Stabilizers are enumerated and evaluated.

Eighteen important reactions of hydrogen peroxide with organic compounds are tabulated.

Attention is called to the efficacy of hydrogen peroxide in catalyzing certain polymerizations. Hazards involved in uses, transportation and storage are outlined and such methods to minimize them are indicated. (From "Industrial & Engineering Chemistry", December 1947)

★

Determination of Carbon Monoxide in Air

A new method, in which the reaction between red mercuric oxide and carbon monoxide is utilized, is described in this 1 page article.

Apparatus used and procedure for the analysis is described. Sources of error are enumerated and necessary precautions are emphasized.

Tabulated results show the required temperature for attaining complete reaction. Accuracy of the method is checked against National Bureau of Standards samples, and results tabulated. Illustrated with 3 tables and 3 figures. (From "Analytical Chemistry", December 1947)

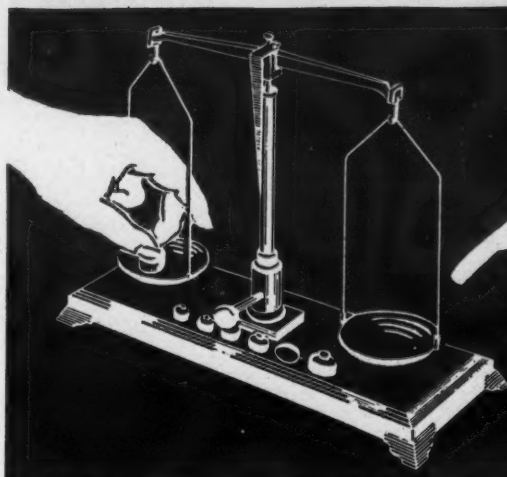
★

Dimensionless Groups in Fluid Friction, Heat and Material Transfer

A 19 page monograph including 2 figures and 80 equations presents the derivations and uses of dimensionless equations in problems including fluid friction, heat and mass transfer.

A coordinated treatise on these groups is given in such a way as to facilitate a survey of the entire field and to be of help for ready reference. (From "Chemical Engineering Progress", January 1948)

MARCH, 1948



You've Got to Measure
ACCURATELY
to Get the Best Results!

For Accurate Salt Measurement

"PASS the SALT" BY LIXATOR

In the production of chemicals, leather, textiles, plastics, soap, sulphonated oils, petroleum products, food products, in refrigerating equipment such as spray decks and unit coolers, in regenerating zeolite water softeners, the Lixator provides an extremely easy way of measuring salt accurately in the form of brine.

For the Lixator automatically and continuously makes 100% saturated, crystal-clear brine. Since each gallon of Lixate brine always contains exactly 2.65 pounds of salt, a definite volume of Lixate brine supplies a definite quantity of salt. The trouble and waste of measuring salt by hand or mechanical devices, or measuring by weight without regard to water absorption during storage, are things of the past. Both the correct amount of salt, and the rate of addition can be controlled by valves.

Leading companies in many industries are availing themselves of the Lixator's ability to measure salt accurately... to reduce labor and handling costs and to improve the quality of their products. It will pay you to investigate the Lixate Process for making brine for your plant.



Get

the full story on why accurate salt measurement is always possible with Lixate brine. Send for your copy of our free pamphlet today!

INTERNATIONAL SALT COMPANY, INC., Dept. CP-3, Scranton, Pa. Gentlemen: Please mail absolutely free your pamphlet, "How Lixate Brine Solves the Problem of Accurate Salt Measurement."

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HOW THE LIXATOR WORKS

In the upper zone—Flowing through a bed of rock salt which is continuously replenished by gravity feed, water dissolves salt to form 100% saturated brine. In the lower zone—Through use of the self-filtration principle originated by International, the saturated brine is thoroughly filtered through a bed of undissolved rock salt. The rock salt itself filters the brine. Nothing else is needed.



WHAT THE LIXATOR PROVIDES

- ✓ Chemical and bacterial purity to meet the most exacting standards for brine
- ✓ Unvarying salt content of 2.65 pounds per gallon of brine
- ✓ Crystal-clear brine
- ✓ Continuous supply of brine
- ✓ Automatic salt and water feed to Lixator
- ✓ Inexpensive, rapid distribution of brine to points of use by pump and piping

Plus These Production Savings

- ✓ Eliminates shoveling salt from storage
- ✓ Ends hauling salt around the plant
- ✓ Saves time wasted in making brine
- ✓ Stops waste of salt by spilling
- ✓ Assures accurate salt measurement

The LIXATE Process

for making brine

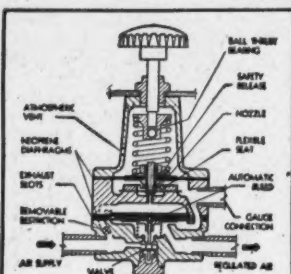
INTERNATIONAL SALT COMPANY, INC.
Scranton, Pa.

When inquiring check CP 4360 on handy form, pgs. 2-3

37 1/2% reduction in price,
resulting from a complete
tooling program.

No change in quality or
in accuracy of performance

By re-tooling, by using special brass forgings, and by making other production improvements, we delivered 5396 more NULLMATIC Pressure Regulators in 1947 than in the previous year. Now, we are able to reduce the list price of the 15, 30, 50, and 100 psi ranges from \$40.00 to \$25.00, effective February 1, 1948.



This announcement follows, within a few months, reductions in the list prices of Moore Valve Positioners, Moore Constant-differential Relays (for purge systems), and NULLMATIC Pressure Transmitters (for liquid-level and pressure measurement). In all cases, these new lower prices have resulted from increased production and tooling improvements.

STANDARD RANGES

Series 40—1/4" ips

Range	Model No.	Price
0-50" H ₂ O	40-2	\$31.50
0-15 psi	40-15	
0-30 psi	40-30	25.00
0-50 psi	40-50	
0-100 psi	40-100	
0-200 psi	40-200	30.00
0-300 psi	40-300	

Series 42, 1/2" ips connections, have approximately 3 times the capacity of Series 40.

Now,
you can use

NULLMATIC Pressure Regulators

wherever high precision regulation
of air or gas pressure is required.

This instrument maintains the regulated pressure at the set value, regardless of wide changes in flow or in supply pressure.

The NULLMATIC Pressure Regulator is actually a complete pressure controller in which the main valve is operated by a pilot nozzle. Like all NULLMATIC instruments it utilizes the

Pneumatic Force-balance System

Bulletin 402 which shows capacities, air consumption for dead-end delivery, and the principle of operation, will be furnished on request.

Complete remote-manual-control panels, with by-pass and gauge, can be furnished from stock. Write for Bulletin 401.

MOORE PRODUCTS CO., 914 E. Lycoming St., Phila. 24, Pa.

When inquiring check CP 4361 on handy form, pgs. 2-3

Tests on Tee Fittings to Aid Design of Piping Systems

Results of research reported in paper before
meeting of chemical engineers

In order to provide a more exact basis for the design of piping installations, a series of tests was made at Columbia University to determine the frictional effects produced by a one-inch threaded iron tee fitting. This information should prove useful in many cases where one stream of fluid is to be split into several parts to feed several pieces of equipment, or where several pipelines discharge into a single pipe.

In designing piping systems for chemical plants which are to handle air, steam and water, the engineer must know the resistance offered to the flow by the various parts of the system. This is necessary in determining the pressure required to force the desired quantity of fluid through a given set-up, or to calculate the size of an installation to meet specified conditions of rate of flow and pressure.

Although the frictional resistance set up by the pipe itself and by some of the common fittings, such as valves and elbows, has been investigated as far back as the early 1890's, very little research has been carried out on the ordinary tee fittings, commonly used wherever two streams join or are formed from one. The tests were undertaken at Columbia University in order to substantiate and expand information obtained in Germany on specially made tees, and at the University of Texas on standard cast iron tees.

Tests were made on standard one-inch threaded tees in all four of the possible ways in which liquid streams can be made to combine or split up in the three legs of the arrangement. Both oil and water were used in the study of effects of using a viscous liquid. It was found that the resistance, while increasing with the rate of flow of fluid much in the same manner as with any other fittings, varied also with the relative quantities flowing in the three legs of the tee.

Each of 4 possible arrangements showed a characteristic type of variation; in some cases apparently negative frictional effects were noted. In others the friction passed through a minimum when the smallest stream was about 30% of the largest. It was found also that the resistance increased considerably if the ends of the pipe used were improperly reamed out for threading. (From — "Abstract of a Paper — Friction Losses in Screwed Iron Tees." by J. W. Hoopes, S. E. Isakoff, J. J. Clarke and T. B. Drew, Columbia University, presented before the Buffalo Regional Meeting of American Institute of Chemical Engineers.)

★

Gas Lines of Tenite Tubing Ease Installation Job; Cut Costs

Readily available; light, easily joined; resist
deterioration in most soils

Extruded Tenite tubing is enjoying wide application in gas pipeline home installations made by Southern Cali-

Ideas

fornia Gas Co. The one-inch tubing used offers several advantages over steel type. First, it is readily available.

Next, it is light weight, handles easily and more easily installed. Shipping costs are lower and installed costs are in line. Particularly convenient is its easy bending property and greatly simplified joining operations. Also, important is its resistance to deterioration in most soils.

Tests have been made on installations for a period of three years. Indications are that the Tenite piping may be used almost anywhere, except where it might come into contact with refinery gases or other products of oil refining. The piping is laid only in mild soils, not in rocky ground and placed at standard depth of eighteen inches.

In joining, the two ends of the one-inch outside diameter are coated with a solvent cement and joined. A sleeve on the one-inch inside diameter tubing, similarly coated on the inside, is then slipped over the joint. Joints are covered with grease, two wraps of cellulose acetate sheet, and one of kraft paper. This makes a suitable shield for mild soils and does away with the time-consuming and more difficult procedure required with steel pipe.



Tenite pipe joined with solvent cement and protected by sleeve

Right angle bends are made by means of prefabricated right-angle sections sleeve-jointed to the tubing. Joints at the "service T", where the Tenite pipe meets the steel main, and at the "riser", where a copper tube joins the Tenite pipe to carry gas into the building, are made with Dresser fittings.

Tenite pipes and joints are made to stand up under a maximum safety pressure of thirty pounds per square inch, although in tests they are said to have withstood higher pressures. (Tenite is cellulose acetate butyrate and is made by Tennessee Eastman Corp., Kingsport, Tenn.)

★

New Paper Produces Drawings On Direct Process Equipment

Blueprints, diazos quickly produced

A revolutionary silver-sensitized paper for reproducing

engineering drawings on blueprint or direct-process equipment has been developed by the Eastman Kodak Company. The paper (Kodagraph Autopositive) embodies a new type emulsion which permits its use in normal room light and produces a high-contrast positive copy direct from a positive original.

Such copies are intended primarily for use as printing intermediates or "masters," and make possible quick and economical production of blueprints or diazos of exceptionally high quality and at uniformly high rates of speed. They also are of value as file copies because of the long life of the photographic image.

The paper combines the fine detail obtained by contact printing with high contrast previously obtainable only through the use of the process camera and negative-positive steps. This permits the production of diazo or blueprints from drawings generally regarded as unprintable.

The paper is supplied in standard sheet and roll sizes.

★

Regional Laboratory to Study Soybean Flavor Deterioration

Project will be coordinated with work by the States and private industry

Enhancing the flavor of soybean oil and retaining that flavor are the objectives of studies to be conducted by the Bureau of Agricultural and Industrial Chemistry's Northern Regional Research Laboratory at Peoria, Ill. They will be coordinated with related work by States and by private industry.

Although considerable progress has been made toward solving the flavor problem of soybean oil, the causes of flavor deterioration after processing are still unknown. Scientists declare that before a permanent solution can be found, new and fundamental research is required to detect, isolate and identify the constituents of soybean oil that are responsible for objectionable flavor.

The tremendous increase in soybean production makes the problem most important. Figures for 1929-30 were 9 million bushels; for 1946-47 197 million bushels.

★

Special Reprints Give Reference Data on Production, Maintenance Welding

Special reprints of two bulletins concerning production and maintenance welding at low base metal heat are now available as reference sources.

One, entitled "Arc Welding Problems Successfully Solved," presents 12 production case histories on welding cast-iron, low and high alloys steels, stainless and tool steels to high carbon steels; welding special manganese parts, elimination of undesirable characteristics, etc. The various steps are illustrated.

The other, "Another Major Advance in Gas Welding," reveals use and applications of new developments in special flux-coated alloys for steel, cast-iron, brass, aluminum. Correct procedures, physical properties, charts and technical data are outlined, illustrated. Applications discussed include steel, cast iron malleable, bronze, brass, copper. "Eutectic Welder," Vol. 4, No's 7 and 8.

Issued by Eutectic Welding Alloys Corporation, Dept. CP, 40 Worth St., New York 13, N. Y. When inquiring specify CP 4362 on handy form, pages 2 and 3.

MARCH, 1948

NEW... EXCLUSIVE!

Nibcoloy

Lock Flange Fittings

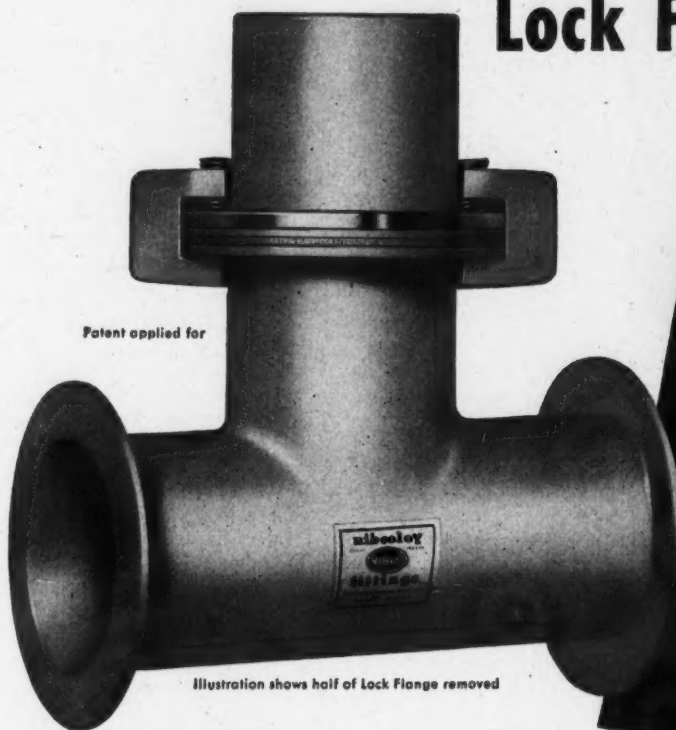
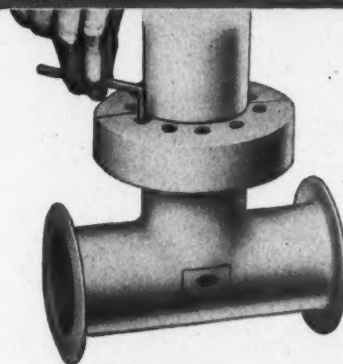


Illustration shows half of Lock Flange removed

*Simplest,
most economical
method of installing
demountable
alloy piping*

**ONLY TOOL NEEDED IS
THIS LITTLE WRENCH**



Just a few twists with a set screw wrench and you break a NIBCOLOY Lock Flange joint—for inspection, cleaning, renewing gaskets, or for a change in the line itself. The simple, direct connection is just as easily restored... Fittings are available in Inconel, Nickel and Monel and stainless steel (Types 316-347-304). Lock Flange is manganese bronze, Drive Ring of stainless steel and set screws are rust-proofed carbon steel... NIBCOLOY lock flange fittings can be produced to meet your specific needs. Your detailed inquiry is solicited. Mail coupon for Catalog 902 covering the entire line of NIBCOLOY wrought fittings.

Northern Indiana Brass Co., 303 Plum St., Elkhart, Indiana.

Please send your catalog 902, including complete information about the exclusive New Nibcoloy Lock Flange.

Individual _____
Company _____
Address _____

When inquiring check CP 4363 on handy form, pgs. 2-3

Corrosion resisting Monel*

HOW MANY TIMES have you wished for fastenings like these? Made of Monel*, they resist rust, corrosion, heat, shock, vibration and overstraining. Send for list of distributors.

*Reg. U. S. Pat. Off.

Fastenings
come
in
all
shapes
and
sizes!



The INTERNATIONAL NICKEL Company, Inc.
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When inquiring check CP 4364 on handy form, pgs. 2-3

MAKE YOUR OWN

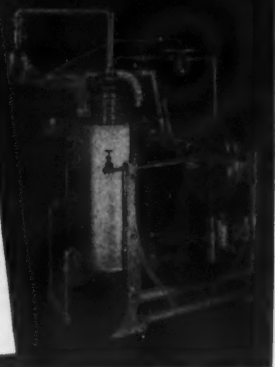
FOR ALL OVENS AND FURNACES

Used in 84 varied industries including metal heat treating and smelting, food processing, ceramics, chemicals, textiles and plastics. No more loss and delay from gas shutoffs or varying pressures. Instant change to and from gas. Greater safety

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Does not atomize it. Gives clean, blue flame — no soot or contaminating odors. Constant pressure and fuel-air ratio automatically maintained from oxidizing to reducing flame. Less scale on ferrous work. Quicker and more uniform heat penetration and increased production speed.

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VAPOFIER



VAPOFIER CORP.

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CITY..... STATE.....

When inquiring check CP 4365 on handy form, pgs. 2-3

Page 54

Ideas

Standardized Industrial Painting Goal of Color Survey

*General Electric Co. study would end confusion;
combines good features of various systems*

In the planned use of color to improve worker morale the systems recommended by various paint manufacturers have varied in colors specified for specific purposes.

Planned use of color to improve worker morale has been adopted by numerous plants on the recommendations of various paint manufacturers. While in accord on the ends to be achieved, no two paint companies recommend the same colors for the same purpose.

Before the War the General Electric Company had begun to try out proposals for the use of color. Before the improvements in worker morale and efficiency could be evaluated it became evident that difficulties would develop from the use of color as suggested that would outweigh the advantages. These were: first, coding conflicts; second, readjustment losses with employee transfers; and third, lack of appearance coordination.

The first is most important: the possibilities of conflicts between the colors used for decoration and the colors used for coding. This conflict may arise not only in such critical applications as those specified in the American War Standard Safety Color Code for Marking Physical Hazards, Z53.1-1945, but also and much more frequently, in connection with the unstandardized colors used to code controls, piping, valves, conduits, conveyor hangars, bins, etc. The conflict arises less from the danger of using the same color both for the coding and background than it does from the fact that the same coding color may seem different when seen against backgrounds of varying contrast.

The second difficulty appears in the form of psychological dislocation of the employee when transferred, not merely from one operation to another or from one plant to another, but also when shifting from one company to another. For example, if a worker becomes adjusted to a color surrounding that gives him a "lift," and then moves to a new position where functional color either has been applied not at all or has been differently applied, the worker will suffer a period of readjustment involving distraction from his work.

The third difficulty is the least important, although the most obvious. It is the patchwork appearance that results from uncoordinated applications of different color systems in the same or different plants.

The confused situation was one demanding immediate clarification to avoid chaos that would discredit any functional color system, however sound. At the War's end, a joint committee was started within the General Electric Company to seek an answer. The Apparatus Section of Appearance Design directed by Ray Patten took the lead, supported by the Lighting Research Laboratory, under the direction of Dr. Matthew Luckiesh, the Resin and Insulation Materials Division, and other divisions.

The outcome of this program is a composite color system using what is considered the best in each of the most important paint manufacturer's proposals. It comprises eight colors derived from the hundreds recommended for floors, walls, equipment, etc. The sys-



Conveying Frozen Foods Was This Problem! What is yours?

This difficult conveying problem in processing frozen foods has been solved by an A-F engineered Completely Co-ordinated Conveying System.

All types of fruits and vegetables are handled with speed, efficiency, and cleanliness.

You, too, can speed production and cut costs through all the stages of processing, manufacture, storage and shipping with an A-F Conveyor System.

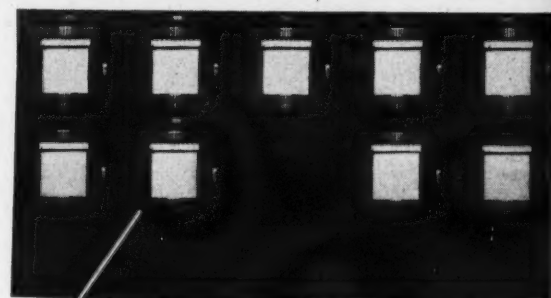
Our 47 years of experience is at your service. Why be satisfied with less? May we discuss your problems with you. Write today.

THE ALVEY-FERGUSON COMPANY

14 Disney Street Established 1901 Cincinnati 9, Ohio
Offices in Principal Cities: Coast-to-Coast



When inquiring check CP 4366 on handy form, pgs. 2-3



Add THERMOHM To Your Control Vocabulary

Shifting temperature responsibilities to Thermohms, the L&N Electrical-Resistance Thermometers, used with Micromax Recorders or Controllers, is an improvement many plants can make now. It may even reduce operating costs of present plant machinery! The battery of Micromax Recorders shown above, for example, will enable one man to log temperatures detected by Thermohms at 144 different points in a food storage plant.

Thermohms have already been added to the control vocabularies of many men in refrigeration, ice cream making, air conditioning, and other food and chemical plant operations.

If you want a description of the equipment, please ask for Catalog N-33C, sent on request.



LEEDS & NORTHRUP CO., 4995 STENTON AVE., PHILA., 44, PA.

LEEDS & NORTHRUP

MEASURING INSTRUMENTS TELEMETERS AUTOMATIC CONTROLS HEAT-TREATING FURNACES

Jt. Ad N-33C(6a)

When inquiring check CP 4367 on handy form, pgs. 2-3

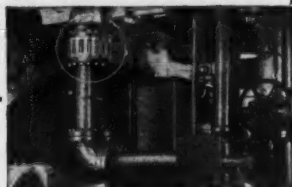
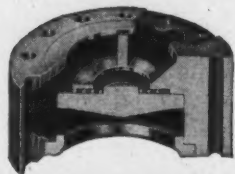
CHEMICAL PROCESSING Preview

THE WILLIAMS-HAGER

flanged SILENT CHECK VALVE

with these EXCLUSIVE FEATURES

- Rugged Design
- Removable Disc and Seat
- Removable Disc and Seat
- Non-Wear Conical Spring
- Use in Any Position
- Real Pump Protection
- Silent in Operation
- Insurance Against Damaging Water Hammer
- Built of Material to Meet Requirements of Any Service
- Built for all Pressures



MERCHANDISE MART, CHICAGO, ILLINOIS. Largest Commercial Building in the World. Service: Fire Pump, Air Conditioning, Chilled Water.

Rugged, simple and compact, it is easily-installed between flanges and can be readily removed for inspection. The Valve Seat and Disc are renewable and the valve can be resealed without special tools. The WILLIAMS-HAGER SILENT CHECK VALVE is built of carefully selected materials to very close tolerances. It is subjected to four inspections and very exacting tests before shipment. Write for new bulletin.

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Pump Valves . . . Water Gauges . . . Gauge Cocks . . . Steam Traps . . .
Pump Governors . . . Feed Water Regulators . . . Water Columns
3015 PENNSYLVANIA AVENUE • PITTSBURGH (12), PA.

When inquiring check CP 4368 on handy form, pgs. 2-3

SPRACO NOZZLES

Write for NOZZLE CATALOG to
SPRAY ENGINEERING CO.
125 CENTRAL STREET • SOMERVILLE 45, MASS.

When inquiring check CP 4369 on handy form, pgs. 2-3

MARCH, 1948

Ideas

tem is foolproof in any hands because the balanced relation of any one color to all others in the system precludes color discords.

A highly detailed report on the methods adopted and the results obtained has been made. (American Standards Assn., New York 17, N. Y.)

All-Basic Open Hearth Tried Out in 122 Ton Furnace

*May determine advantages of various brick
where combustion is hastened by oxygen*

The fastest known methods to make open hearth steel are to be tried out with a 122-ton furnace by Carnegie-Illinois Steel Co. at South Chicago. So that it may weather the unusually high temperatures associated with experimental speed-up processes, numerous innovations in refractory brick are employed.

The furnace will be operated under commercial conditions to aid research efforts of the parent United States Steel Corporation. Results will be studied to determine the advantages of various grades of furnace lining brick when combustion is hastened by the application of oxygen and other means. One of the first "all-basic" open hearth installations in the United States, the South Chicago furnace has been built of basic brick, as opposed to the silica or acid-brick in general use. All available data on the use of basic brick were carefully studied and correlated to evolve a furnace design appearing to offer the simplest and safest solution to the various problems inherent in the use of basic brick.

Experiments will include the use of oxygen in various kinds of burners, as well as the use of preheated compressed air for the atomization of oil. Studies also will be made of flame radiation, the effects of furnace efficiency of the higher temperatures permitted by basic lining brick, and to resolve a host of other technical questions concerning steelmaking innovations which have assumed definite shape since the war ended.

In plans for the new furnace care has been taken to overcome service deficiencies anticipated in those furnace parts most affected by the more intense temperatures to be encountered.

A recent paper, "The Outlook for an All Basic Open Hearth Furnace" by R. B. Sosman, recently retired assistant director of research, United States Steel Corporation of Delaware, lists incentives for building a basic roof as follows: (1) Increased melting speed; (2) longer furnace life; (3) less silica in slag floating on top of molten steel, which means a smaller volume of refining slag, and (4) easier clean-cut slag pockets. Dr. Sosman listed disadvantages as (1) higher cost of basic brick, and (2) additional weight.

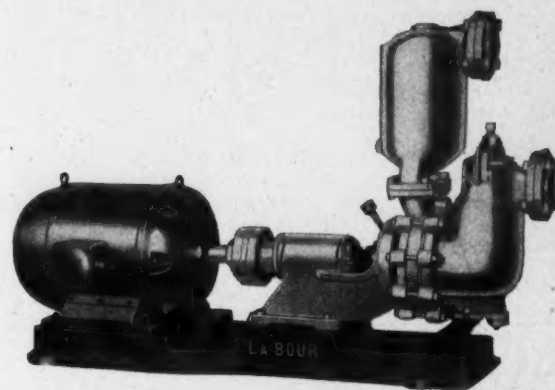
In constructing the South Chicago furnace five grades of basic brick are used, made in various combinations of chrome and magnesite and from three different sources.

Chain Conveyors Speed Cartons, Boxes, Cans; Bulletin Shows Floor Plans

A 16-page chain conveyor bulletin contains floor plans, layouts, installation views, diagrams and detailed construction information for economical, prompt handling of cases, cartons, boxes and cans. Bulletin P-C18-1A-1, issued by Island Equipment Corporation, Dept. CP, 101 Park Ave., New York 17, N. Y. When inquiring, specify CP 4370 on handy form, pages 2 and 3.

It was true 25 years ago

LABOUR PUMPS NEVER LAY DOWN ON THE JOB



and it's still true...

Dependable service, without expensive interruptions, is the most important feature any pump can offer. For a quarter of a century, LaBour pumps have proved they are dependable, in so many kinds of service and in so many plants all over the world, that today's buyer cannot have the slightest doubt about them.

THE LABOUR COMPANY, Inc.

Elkhart, Indiana, U. S. A.



CENTRIFUGAL PUMPS

When inquiring check CP 4371 on handy form, pgs. 2-3

NOW AVAILABLE IN
COMMERCIAL QUANTITIES

ACETONITRILE

(Methyl Cyanide)
 $\text{CH}_3\text{C}\equiv\text{N}$

A clear colorless liquid distilling without decomposition at 80-82° C.

MISCIBLE WITH

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Cellulose Ethers
Paraffins
Fatty Acid Glycerides
Fats

For further information write to:



When inquiring check CP 4372 on handy form, pgs. 2-3

Ideas

Stationary Mercury Cell Produces 50% Liquor in the Decomposer

High purity and more than treble concentration NaOH important features

A new stationary mercury cell developed by The Mathieson Alkali Works (Inc.), 60 E. 42nd St., New York 17, N. Y., produces 50% liquor directly at the cell, a much more concentrated solution than ordinarily obtained. It conserves floor space, requires less power and utilizes less expensive construction materials.

The cell produces caustic soda of high quality by the electrolysis of brine in two stages. In the first stage, sodium amalgam and chlorine are formed. In the second stage, the amalgam is decomposed to form caustic soda and hydrogen.

The new cell consists of two chambers, an electrolyzer and a decomposer. Between these two chambers is located the pump. In the electrolyzer, brine contacts a mercury cathode and a graphite anode. In operation, direct current is passed through the electrolyzer forming sodium amalgam at the cathode and chlorine gas at the anode.

The sodium amalgam is pumped to the decomposer, where it becomes the anode (graphite packing constituting the cathode). The sodium of the amalgam reacts with water in contact with the graphite packing, to form caustic soda and hydrogen gas. The mercury,

now practically freed of sodium, is recirculated to the electrolyzer.

The cell embodies a number of distinctive features. One is the electrolyzer anode. It has a flexible connection, which permits it to be raised or lowered, thus allowing the anode-to-cathode distance to be adjusted frequently to the most economical space without interrupting the cell current. The chlorine released at the bottom of the anode escapes through slots in the graphite, thus permitting the chlorine to pass rapidly to the upper surface of the anodes.

The amalgam decomposer is a vertical tower filled with graphite packings. This provides a very short anode-to-anode distance, an important consideration for efficient decomposition. The tower is flooded with amalgam which enters at the top; pure water is introduced near the bottom and forces its way upward in a very thin film between the amalgam and graphite surfaces.

The electrolyzer is composed of a standard steel channel and rubber-covered steel side angles bolted together to form a trough. This construction is more economical than that used for some mercury cells.

Present recommendations are for a current density of 2.5 amperes per square inch; current efficiency is credited at 95%.

The amalgam can be kept free of impurities by skimming its surface. The electrolyzer is provided with an end box having a removal cover for this purpose. The most important element in control of operations is a

SYNTRON

"Vibra-Flow"

VIBRATORY FEEDERS



Have 5 Distinct Features—

1. Handle a range of materials, from light, fine powders to heavy, bulky limestone, etc.
2. Provide variable control of material flow.
3. No moving, wearing mechanical parts, such as gears, cams, idlers, or eccentrics.
4. Available in a variety of trough styles—flat pan, tubular, grizzly, and spreader.
5. Capacities of from a few pounds to 500 tons per hour.

That Will Increase Your Material Handling Efficiency!

An illustrated folder is available or, send us the details of your problem—we'll be glad to submit recommendations.

SYNTRON CO.

110 Lexington

Homer City, Pa.

When inquiring check CP 4373 on handy form, pgs. 2-3



COVER PIPES TANKS, WALLS

Anyone can brush, trowel or spray NoDrip on any clean, dry surface. Goes on like plaster, forms a seamless, protective coating. **STOPS CONDENSATION DRIP!** NoDrip keeps equipment and floors safe and dry; prevents corrosion of metal and prolongs its life. Acid, alkali and brine resistant. Comes in 1, 5 and 55 gal. drums, ready for use.



TRY NoDRIP
Apply NoDrip to a small area, compare the results with uncovered portions.

Send for free NoDrip Handbook

J. W. MORTALL CO. 530 Burch St., Kankakee, Illinois

When inquiring check CP 4374 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

this label stays stuck

WARNING VOLATILE SOLVENT

- Use with adequate ventilation
- Avoid prolonged or repeated breathing of vapors
- Avoid prolonged or repeated contact with skin
- Do not take internally

CHEMICAL COMPANIES SOLVE THEIR DRUM LABELING PROBLEMS WITH KUM-KLEEN LABELS

Many chemical companies are faced with the problem of finding a label that stays stuck to containers even when exposed to temperature changes and handling.

Ordinary labels won't "take" it... will invariably pop or curl off. Self-Adhesive Kum-Kleens, because of their extraordinary characteristics, provide the solution.

Kum-Kleens stick and stay stuck to all types of smooth surfaces, flat or rounded, including metal, fibre, glass, etc. They are unaffected by heat, cold, humidity, handling.

What's more, Kum-Kleens are applied far faster, because they require no moistening. And they peel off easily without harming the surface, a feature that makes them ideal for labeling "returnables."

IT WILL PAY YOU TO TRY THESE REMARKABLE LABELS. WRITE FOR SAMPLES TODAY. ADDRESS DEPT. CP-3.



EVERY ADHESIVE LABEL CORP., 36 W Union St., Pasadena 1, Calif.; 41 Park Row, N.Y.; 7; 608 S. Dearborn St., Chicago 5; 2930 W. Grand Blvd., Detroit 2, and all principal cities. In Canada, Enterprise Sales, Toronto.

When inquiring check CP 4375 on handy form, pgs. 2-3

Waxes

QUALITY BRAND

MICROCRYSTALLINE WAXES OZOKERITES CERESINES

WHITE, YELLOW, BLACK
Full Range of Melting Points

CARNAUBA CANDELILLA OURICURY

Crude and Refined

SEND FOR BULLETIN D.P.

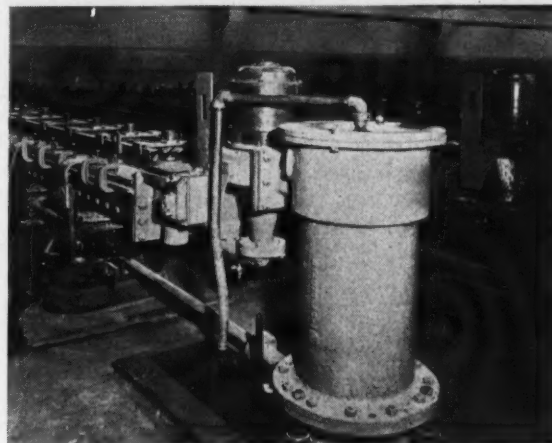
DISTRIBUTING & TRADING CO.
444 MADISON AVENUE, NEW YORK 22

Ideas

regular check of the concentration of the hydrogen in the chlorine.

The illustration shows an installation at the Aluminum Company, Arvida, Quebec, with some changes and innovations provided by that organization's engineers.

The long horizontal chamber is the electrolyzer, in which brine is decomposed to form the sodium amalgam and chlorine gas. The mercury cathode flows in a sloping channel at the bottom of the chamber; the graphite anodes are suspended from the top at regular intervals.



Horizontal electrolyzer & decomposing chamber

From the electrolyzer the amalgam is transferred, by means of the intervening conical pump, to the top of the vertical decomposing chamber in the foreground. Here the sodium of the amalgam reacts with water, which enters at the bottom and forces its way upward in a very thin film between the amalgam anode and the graphite packing cathode, to form caustic soda and hydrogen gas. The mercury, practically freed of sodium, flows back to the analyzer.

*

Process Board Underlay Makes Concrete Floor Moisture-proof

Board's permeability is less than one gram
per square meter per day

A special processed board (Kapco) is being used with excellent results under concrete slab floor. Structures built without basements are kept moisture-proof, thanks to the high vapor resistance quality.

These floors, known as free floating slabs, have Kapco board as an underlayment. Under construction methods formerly used, an excavation one-foot deep was made and filled with slag and pre-mix. The latter was a mixture of asphalt and gravel. In addition to the cost of the slag and the pre-mix there was the cost of spreading and tamping it.

With the new method, sand is added with the foundation fill. Sand cost per structure costs only a fraction of that for that of slag and pre-mix combined. After wetting the sand, the board is laid directly over the sand. It is placed so that the edges overlap four to six inches (Kapco Board is the product of Keystone Asphalt Product Co. — Div. American Marietta Co., Chicago 11, Ill.)

When inquiring check CP 4376 on handy form, pgs. 2-3

MARCH, 1948

FINISH DRYING WITH INFRA-RED



There's good reason why the Phil R. Hinckley Co., Cleveland, has gone all out for Fostoria Evenray. Finish drying on the lighting fixtures and gift items they manufacture, previously required 45 to 60 minutes with another type oven. NOW finishes are baked better in 5 to 8 minutes—and at lower cost. As illustrated, one oven is suspended from the ceiling to save space and a smaller oven is located on the floor.

ONLY FOSTORIA EVENRAY EQUIPMENT HAS ALL THESE ADVANTAGES —

1. **Lower Unit Operating Cost** — Greater efficiency of gold reflectors requires lower connected load — provides maximum utilization of energy.
2. **More Uniform Coverage** — Evenray equipment design gives extraordinarily even distribution of energy on products being processed — as little as 2% variation.
3. **Maximum Temperature Range** — Delivers up to 125 BTU's per square inch per hour. Accommodates from 80 watt to 1000 watt lamps for fastest processing according to job requirements.
4. **Maximum Energy Utilization** — Two-wall oven construction and gold interior reflecting surface provide most effective insulation; it puts the energy on the product.
5. **Complete Line of Equipment** — Evenray models are available for spot heating or full ovens, utilizing clear or reflector type lamps; permitting a choice for best results depending on nature of product to be processed. Flexibility of construction permits quick and easy alteration or addition for production changes.
6. **Approved Electrical Construction** — Listed under Re-examination service of Underwriters' Laboratories, Inc.



Fostoria invites your request for analysis of any baking, drying, dehydrating or pre-heating problem.

Write for Literature

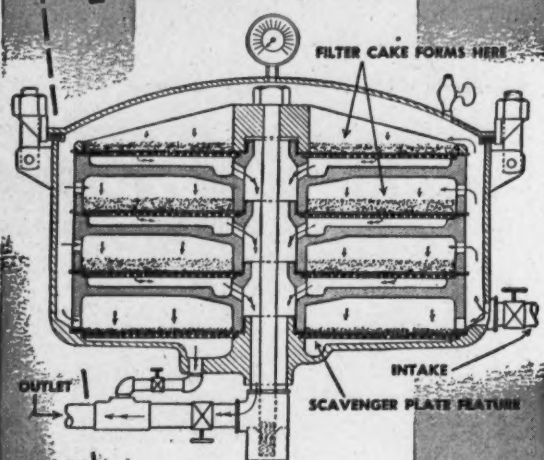
Ask for brochure EV-1146 which pictures and describes many applications with Evenray Systems.

THE FOSTORIA PRESSED STEEL CORP.
FOSTORIA, OHIO

In Canada — Amalgamated Electric Corp., Ltd., and all Northern Electric Branches

When inquiring check CP 4377 on handy form, pgs. 2-3

the horizontal plate principle



... makes these the "filters
that filter all liquids"—

SPARKLER
Horizontal Plate
FILTERS

... here's the story:

- Sparkler Horizontal Plate Filters handle any liquid from heavy varnishes to light alcohols, including products such as acids, oils, beverages, milk, pharmaceuticals, plating solutions, water, etc.
- Equally efficient performance on intermittent or continuous operation, under a wide range of temperature, pressure and viscosity conditions.
- Equally effective whether removing carbons and contact clays or clarifying and polishing with filter aids.
- Patented Scavenger Plate permits complete batch filtration. (It's virtually an auxiliary filter with an independent control valve.)
- Unexcelled filter cake stability — no slipping or breaking.

... why?

Because filter media are supported on a horizontal plane and filter aids floated into position uniformly, filtration takes place uniformly over entire filtering areas. Flow through filter is always with gravity. Sparkler Filtration Is Engineered Filtration—we invite correspondence on your problem. You will receive the advice of filtration scientists with a quarter of a century of experience in a specific field.

SPARKLER MANUFACTURING CO.
MUNDELEIN, ILLINOIS

When inquiring check CP 4378 on handy form, pgs. 2-3

Page 58

New Literature

Purifiers Prevent Crippling of Steam Lines, Equipment, by Solids, Oil, Slugs of Water

Steam purification units for protecting steam lines, superheaters and turbines from harmful moisture, solids and entrained oil are described with application data, hook-up diagrams, installation photographs and accessory descriptions, in a 12-page bulletin.

Units are described as removing slugs of water, boiler carryover and other solids from live, exhaust and process steam lines, or where steam demand varies over wide ranges in short periods. Close-up photographs show costly crippling results upon unprotected steam equipment. Units also are said to make oil-contaminated engine exhaust usable in direct-contact and deaerating feedwater heaters, or for various process uses.

Publication 2725, issued by Cochrane Corporation, Dept. CP, 17th St. & Allegheny Ave., Philadelphia 32, Pa. When inquiring specify CP 4379 on handy form, pages 2 and 3.

★

"Chemicals by Glyco" Is 92-page Manual of Organic Chemical Compounds

Complete line of organic chemical compounds, with formulae for basic uses, is listed and described in a 92-page manual.

New products described include a starch gel stabilizer for textiles, paper and adhesives which greatly retards "set", keeps gel more fluid and prevents lumping; a series of lubricants for increased drawing, stamping and sheeting speeds and prolonged die life in metal working, and an adhesive wax for use in screen printing of textiles.

Range of manufacturer's polyoxyethylene fatty esters has been extended, literature shows, to include long chain, high molecular weight esters. Title: "Chemicals by Glyco," issued by Glyco Products Company, Inc., Dept. CP, 26 Court St., Brooklyn 2, N. Y. When inquiring, specify CP 4380 on handy form, pages 2 and 3.

★

Tells Physical, Chemical, Electrical Properties of Tantalum; Discusses Workability, etc.

A 20-page, illustrated booklet provides helpful information concerning "The Metal Tantalum." Physical, chemical and electrical properties are tabulated and discussed. In many cases, comparisons are made with better known metals.

While not intended to be instructional, booklet discusses workability, weldability, machinability and fabricating techniques sufficiently to give readers an introduction to the subject. Form F-635, issued by Fansteel Metallurgical Corporation, Dept. CP, North Chicago, Ill. When inquiring, specify CP 4381 on handy form, pages 2 and 3.

★

Handbook Tells Taste, Odor Control in Water Purification with Activated Carbon

"Taste and Odor Control in Water Purification" is a 164-page handbook and reference. Literature deals principally with activated carbon, although other methods

of control are included with chapters on each subject. Written by water purification authorities, these cover threshold odor test; effect of water treatment processes on tastes and odors; chapters on manufacture and basic principles, points of application, and storage handling and feeding of activated carbon; determination of carbon dosage; activated carbon evaluation; other methods of odor control; experiences with high pressure aeration, etc. Issued by Industrial Chemical Sales, Division of West Virginia Pulp and Paper Company, Dept. CP, 230 Park Ave., New York 17, N. Y. When inquiring, specify CP 4382 on handy form, pages 2 and 3.

★

"Polymerization of Acetylene to Cyclooctatetraene" Translates German Patents

"Polymerization of Acetylene to Cyclooctatetraene" is the title of a 130-page technical report, including 40-page translation, from German, of manuscript by Dr. Walter Reppe dealing with German patents and patent applications. (A similar text, available in form of a "PB" report from Office of Technical Services, US Dept. of Commerce, does not include the translation mentioned.) Important to technologists, this section covers processes for preparation of cyclic polyolefins, cycloparaffins, phenylacetaldehyde or beta-phenyl-alpha, alpha-ethylidenediesters, process for dimerization of cyclooctatetraene, etc. etc.

Also, numerous corrections have been made in English portion of text by Dr. Karl Kammermeyer, the author and translator. Price: 1 copy, \$17.50; 2 copies, \$16.75; 3 or more, \$15 each. Remit direct to Hobart Publishing Company, Dept. CP, Box 4127 Chevy Chase Br., Washington 15, D. C. Or, when inquiring specify CP 4383 on handy form, pages 2 and 3.

★

Covers Theory, Operating Characteristics of Steam Jet Ejectors for Vacuum Services

36-page steam jet ejector catalog includes 30 sectional drawings, also flow diagrams, engineering data, installation guide, formulae, curves and tables. Theory and operating characteristics of steam jet ejectors for all classes of vacuum service are covered, including single, 2, 3, 4 and 5-stage types.

Non-condensing and condensing types, with barometric inter-and-after condensers for vacuum requirements in various processing and refining procedures, are described. Information is also contained on steam jet vacuum refrigeration for water cooling requirements of air conditioning and process applications. Catalog 1462, issued by C. H. Wheeler Manufacturing Company, Dept. CP, Lehigh and Sedgley Ave., Philadelphia 32, Pa. When inquiring, specify CP 4384 on handy form, pages 2 and 3.

★

Corrosive-Resistant Finned Tube Steam Coils Do Industrial and Process Heating

Finned-tube steam coils for industrial and process heating are described with pictures, tables and engineering data, in a 24-page catalog. Recommended for use un-

CHEMICAL PROCESSING Preview

der corrosive conditions, they are said to be applicable to all high-pressure, continuous-duty blast air heating. Literature includes physical data; procedure, factor method, rating tables and curves for coil selection; air friction tables, properties of saturated steam, condensate rating data, typical specifications, instructions for piping and for replacing tubes. Construction is described, including removable heating element, replaceable copper-finned, cupro-nickel tubes, etc. Catalog B-1318.

Issued by American Blower Corporation, Dept. CP, Detroit 32, Mich. When inquiring specify CP 4385 on handy form, pages 2 and 3.

Dewaterer Recovers Sand, Similar Material; Saves Grain Sizes Once Lost in Overflow

4-page, illustrated folder describes Dewatering Rotoscope for recovering sand and similar materials, and for saving special grain sizes formerly lost in overflow water. Unit is described as a sand dewatering device capable of recovering available sand grains of sufficient fineness to meet specifications, discharging the product dry enough to permit truck transportation or mechanical conveying to and from storage.

Made with capacities of 20 to 150 tons per hr., based on material weighing 100 lbs. per cu. ft., the machine is shown to be self-contained, consisting of 4 major elements. Briefly, these are a circular steel tank; a slow, power-driven rotating disc with inclined, adjustable scoops; an adjustable plow and the necessary driving machinery.

Folder 2263, issued by Link-Belt Company, Dept. CP, 300 W. Pershing Road, Chicago 9, Ill. When inquiring specify CP 4386 on handy form, pages 2 and 3.

Paper Reproduces Positive Blueprint Copies Direct from Positive Originals

A silver-sensitized paper for producing high contrast positive copies of engineering drawings direct from positive originals is presented in an 8-page pamphlet. Description includes large, legible photographs showing actual results obtained in reproducing opaque drawings; worn, stained or discolored tracings, direct process prints or blueprints.

Paper is designed for use in normal room illumination with standard blueprint or direct process printers, literature relates. Bulletin F3-7, "Kodagraph Auto-positive Paper," issued by Eastman Kodak Company, Industrial Photographic Division, Dept. CP, 343 State St., Rochester 4, N. Y. When inquiring specify CP 4387 on handy form, pages 2 and 3.

Booklet Lists Complete Current Stock of Alloy Steels

Manufacturer's complete current alloy steels stock list is contained in 24-page, tabulated booklet. Work-pocket size, it lists sizes, shapes, finishes and conditions of medium carbon, high carbon, case hardening, free machining, carbon-manganese machinery steel, heat treated alloys and tool steels available from this 12-plant group. Explains a Certified Alloy Steel Plan, and contains tables of AISI and SAE standard steel compositions.

Title: "Ryerson Certified Alloy Steels," issued by Joseph T. Ryerson & Son, Inc., Dept. CP, P. O. Box 8000-A, Chicago 80, Ill. When inquiring, specify CP 4388 on handy form, pages 2 and 3.

MARCH, 1948

90% OF ALL V-BELT DRIVE PROBLEMS SOLVED ECONOMICALLY WITH TEXROPE

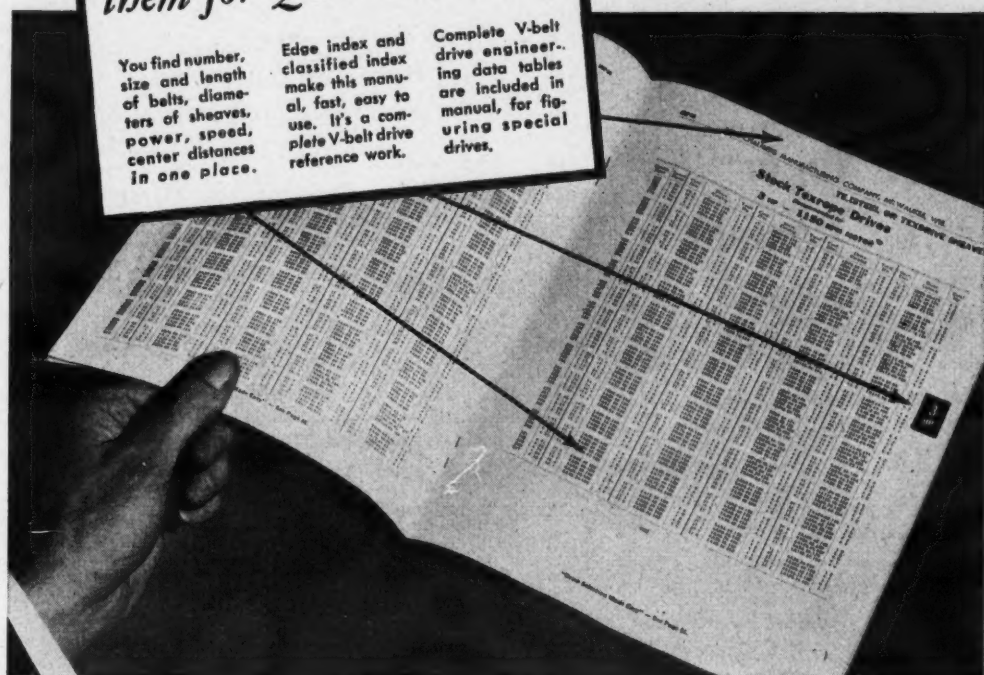
Pre-Engineered Drives

This New Manual Lists them for Quick Reference

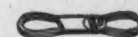
You find number, size and length of belts, diameters of sheaves, power, speed, center distances in one place.

Edge index and classified index make this manual, fast, easy to use. It's a complete V-belt drive reference work.

Complete V-belt drive engineering data tables are included in manual, for figuring special drives.



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"Super 7" V-BELTS
Five Types — Sizes to suit every power transmission job.



Textsteel, Texdrive, "Magic-Grip" — sheaves in a full range of sizes, grooves.



"Vari-Pitch" SHEAVES
Exact variations in speed, stationary or motion control.



SPEED CHANGERS
Speed variations up to 375% at the turn of a crank.



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USING STOCK BELTS AND SHEAVES, Texrope engineers have selected the *best* drive for each requirement . . . the drive most economical in first cost and in maintenance.

Only Allis-Chalmers offers you this complete Pre-Engineered drive manual. It is the product of 23 years of industrial V-belt drive experience, the

finest engineering talent in the business.

Here is a book that will save you time and money in the purchase of V-belt drive equipment. Copies have been sent to many Texrope users and dealers. If you don't have a copy yet, write for Textbook No. 20P40, ALLIS-CHALMERS, MILWAUKEE 1, WIS.

A 2335

Texrope, Super-7, Textsteel, Texdrive, Magic-Grip and Vari-Pitch are Allis-Chalmers Trademarks

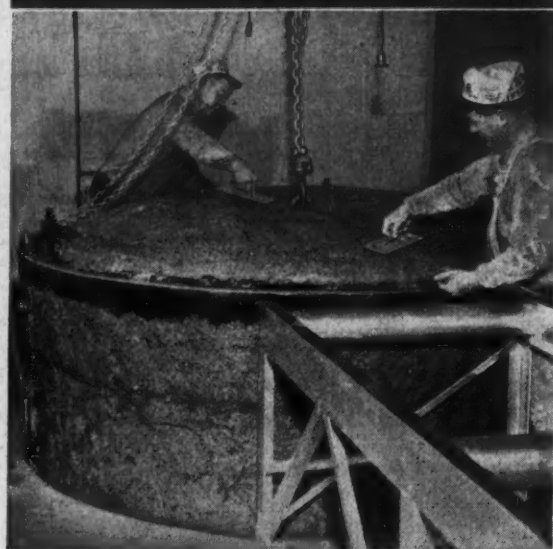
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When inquiring check CP 4389 on handy form, pgs. 2-3

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"Springy Ball" pellets of Eagle-Picher Mineral Wool give Super "66" tremendous insulating efficiency. In addition, this all-purpose insulation actively inhibits rust on metal equipment. It sticks to any shape surface, and withstands temperatures up to 1800 F. Write for complete technical and application data.

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also save you money . . . power . . . time*

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**EAGLE-PICHER
INSULATIONS for**



High and Low Temperature

THE EAGLE-PICHER COMPANY
CINCINNATI (1), OHIO

When inquiring check CP 4390 on handy form, pgs. 2-3

New Literature

Shows Neoprene Industrial Gloves in Various Types, Weights and Lengths

Industrial gloves of processed DuPont Neoprene are presented in an 8-page catalog-bulletin. Containing no natural rubber, various types are fully illustrated including 6 black industrial non-slip models for protection against oils, greases, solvents, acids, caustics, etc.; 4 models of white industrial gloves; light weight Latex Neoprene industrial types, and Neoprene-impregnated and coated canvas gloves.

Neoprene industrial aprons are also described and shown. Products are described as non-irritating and "3 to 7 times more durable than rubber." Title: "Better Hand Protection at Lower Cost Per Hour," issued by the Pioneer Rubber Company, Synthetic Rubber Division, Dept. CP, 239 Tiffin Road, Willard, O. When inquiring, specify CP 4391 on handy form, pages 2 and 3.

★

Compact, 25-amp. AC Solenoid Contactors Have Many Applications

Size 1 AC solenoid contactors, first of complete new line of AC control equipment, are shown and described in a 4-page bulletin.

Literature describes these compact, 25 amp. units as being especially adapted for main line, reversing and accelerating use on AC motor controllers operating single or multi-speed polyphase induction, single phase or small-slip ring motors. Other applications are given, such as automatically remote controlled switches, remote control of heater loads, tungsten or infra-red lamp loads, built-in controls in extremely compact spaces, etc.

Features, accessibility, construction, operating coils, main and auxiliary contacts, dimensions, ratings and maintenance are covered. Bulletin 4451, issued by Ward Leonard Electric Company, Dept. CP, 31 South St., Mt. Vernon, N. Y. When inquiring, specify CP 4392 on handy form, pages 2 and 3.

★

Solid Rotor Type Steam Turbine Features Easy Access to Internal Parts

An 8-page booklet shows and describes engineering features of a solid rotor type steam turbine. These include horizontal split casings and other factors for easy access to all internal parts. Entire rotating unit, for example, can be lifted without disturbing alignment of turbine with driven unit.

Literature includes engineering drawings, dimensional data useful in selecting size and type turbine for specific applications. 5 to 1200 hp. in single stage types.

Catalog ST101, issued by Whiton Machine Company, Dept. CP, New London, Conn. When inquiring specify CP 4393 on handy form, pages 2 and 3.

★

"Encyclopedia of Hydrocarbon Compounds" Simplifies Literary Search

"Encyclopedia of Hydrocarbon Compounds" (2 volumes) simplifies literary search on this subject. Contains molecular and structural formulae; occurrence in nature; names of compounds; all known methods of preparation, with complete bibliography; physical con-

stants; methods of detection and determination; outstanding properties and reactions.

Volume 1 and 2 deal with hydrocarbons containing 1 to 5, and 6 to 7, carbon atoms, respectively. Published in loose-leaf form with standard book covers, the volumes may be kept up to date through purchase of biennial replacement-addition sheets. Compiled by J. E. Faraday, Ph. D.

Volume 1 and 2 are priced at \$15 and \$17.50 respectively. Remit direct to Chemical Publishing Company, Inc., Dept CP, 26 Court St., Dept. 36, Brooklyn 2, N. Y. Or, when inquiring, specify CP 4394 on handy form, pages 2 and 3.

★

Ethylcellulose Useful in Lacquers, Emulsions, Hot Melts and Specialty Coatings

Two technical booklets cover: 1) ethylcellulose, its general usefulness and basic properties, and 2) one of its specialty uses, in phonograph recording lacquers. The first, a data handbook, devotes 16 pages to a condensed, informative report concerning this manufacturer's ethylcellulose, with suggestions for its use in lacquers, emulsions and hot melts. Includes properties, types, ranges, viscosities, etc., with 5 charts.

The second is No. 1 of a series of monthly bulletins by manufacturer's Coating Technical Service on topics of interest for specialty coating applications. It is 9 mimeograph pages. Title: 1) "Ethocel Data Handbook" and 2) "Ethocel Notes, No. 1." Issued by The Dow Chemical Company, Coatings Section, Plastics Division, Dept. CP, Midland, Mich. When inquiring specify CP 4395 on handy form, pages 2 and 3.

★

Baked-on Synthetic Resins Protect Metals in Chemical, Paper, Brewery Processes

Baked-on, synthetic resin protective coatings and linings for steel and other metals are described, with illustrated applications, in an 8-page brochure. Used on practically any type of processing, storage or transportation equipment, these are said to possess high staying qualities against acids, solvents, brines, alcohols, fats, oils, syrups, petroleum, etc.

Listed applications include storage tanks, pipe lines, mixers, vacuum driers, tank car uses such as acetic acid, acetic anhydride, formaldehyde, neoprene latex, wines, 50% sulphuric acid, etc.; also numerous brewery, paper and pulp uses. "Lithcote Linings," issued by Lithgow Corporation, Dept. CP, 333 W. 40th Place, Chicago 9, Ill. When inquiring, specify CP 4396 on handy form, pages 2 and 3.

★

Water-Soluble Wool Fiber Lubricant Speeds Work, 2 Years' Mill Run Tests Show

Performance results of Fybroil 1115, a water-soluble wool fiber lubricant, are revealed in a 6-page technical bulletin. Based on 2 years' actual mill runs, tests are said to show that this lubricant accelerates picking, carding, spinning, dyeing, finishing.

Performance study outlines characteristics, as related to various stages of wool processing, also lists specific results obtained by wool and worsted mills which are

If you buy
CORROSION-RESISTING EQUIPMENT
you should
have this
**NEW
BULLETIN**



Listing 155 corrosives, it shows which of five well-known DURCO alloys offers most satisfactory resistance to each. Where two or more alloys are satisfactory, the most economical alloy possessing the required mechanical properties can be selected.

If you buy pumps, valves, pipe, heat exchangers, steam jets, and other corrosive-handling equipment, you will find this guide an invaluable aid.

Write today for your free copy
of bulletin 100



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DAYTON 1, OHIO
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50-GM

When inquiring check CP 4397 on handy form, pgs. 2-3

SAFE FOOTING



Write for Booklet

Inland Steel Co., 38 So. Dearborn St., Chicago 3, Ill.

INLAND 4-WAY FLOOR PLATE

STOCKED BY
LEADING STEEL WAREHOUSES

When inquiring check CP 4398 on handy form, pgs. 2-3

MARCH, 1948

New Literature

regular users. Literature details general properties such as penetration, stability, viscosity, etc., and describes manner in which solutions are prepared and applied. Technical bulletin, "Fybroil 1115," issued by L. Sonneborn Sons, Inc., Textile Chemicals Division, Dept. CP, 88 Lexington Ave., New York 16, N. Y. When inquiring specify CP 4399 on handy form, pages 2 and 3.

★

6-stage Pumps Handle 1200-lb. Boiler Pressure, All High Pressure Hydraulic Needs

Six-stage, type TH high pressure pumps for boiler pressures up to 1200 lbs. are subject of a 6-page bulletin. Literature includes both external and large sectional views, illustrating constructional features such as packed protective shaft sleeves; grooved, labyrinth-type, renewable wearing rings; suction pressure only on both stuffing boxes; oversize first stage suction and impeller unit.

Services are reported to include boiler feed, pipe line, de-barking, etc. Metal specifications are tabulated. Bulletin 244, issued by Warren Steam Pump Company, Inc., Dept. CP, Warren, Mass. When inquiring, specify CP 4400 on handy form, pages 2 and 3.

★

Lists, Describes More than 100 Synthetic Organic Chemicals

More than 100 chemicals in commercial, semi-commercial and laboratory stages of production are described in 15th edition of "Sharples Synthetic Organic Chemicals" catalog. Products described include alcohols, alkyl chlorides, substituted amides, amines, dithiocarbamic acid derivatives, ethers, esters, hydrocarbons, mercaptans, organic sulfides, phenols and substitute ureas.

Issued by Sharples Chemicals Inc., Dept. CP, 123 S. Broad St., Philadelphia 9, Pa. When inquiring, specify CP 4401 on handy form, pages 2 and 3.

★

Tests Show Low Power Loss with Flexible, Water-cooled, High Frequency Conductor

Water-cooled, flexible leads for conducting high frequency currents are shown, described, diagrammed and tabulated in a 6-page folder. A description of tests demonstrating the low power loss resulting from use of this lead is included. Great flexibility in equipment for melting metals is reported.

"Titeflex High Frequency Conductor" folder, issued by Titeflex, Inc., Dept. CP, 600 Frelinghuysen Ave., Newark 5, N. J. When inquiring, specify CP 4402 on handy form, pages 2 and 3.

★

Offers Engineering Tables on Pressure and Temperature Regulators, Steam Traps, etc.

Pressure regulators, temperature regulators, combination pressure and temperature regulators, steam traps and self-cleaning strainers are presented in a special bulletin which includes dimensions, applications, capacities, engineering tables and specifications. Temperature regulator bulletin, issued by O. C. Keckley Company, Dept. CP, 400 W. Madison St., Chicago 6, Ill. When inquiring specify CP 4403 on handy form, pages 2 and 3.

FOR TODAY'S TOUGHER JOBS A NEW TOUGHER PUMP!



Model 340 - 1 1/2" stainless steel (18-8 type 317) pump

JABSCO Stainless Steel Pump

The pump with the
RUBBER impeller
(neoprene)

A relatively high vacuum pump for
liquid transferring and circulating.

VACUUM

Vacuum in excess of
27" of mercury.

PRESSURE

Suitable for operating
pressures from 0 to 25
PSI - slightly higher
pressure permissible
for intermittent or ir-
regular operation.

CAPACITIES

Capacities up to 55
GPM of water at 1750
RPM at 0 PSI.

TEMPERATURES

Temperatures up to
160° F. maximum.

INSTANTLY SELF-PRIMING. Jabsco's patented pumping action creates a high suction for instant self-priming at all times - at all speeds. They're compact, trouble free pumps that permit cleaner - safer - easier installations.

NEOPRENE IMPELLER. The long life flexible impeller can be replaced in a few minutes without disconnecting the pump from the piping system or removing the pump shaft from installations. The flexible impeller permits the passage of abrasive materials and solids - creates a positive suction - and assures pumping efficiency and carefree performance.

GEARLESS - NOISELESS. Jabsco pumps are quiet and efficient in operation. There is no metal action. Factory lubricated and sealed ball bearings insure extra long life. Bearings are adequately protected by ample drain holes and slinger ring.

SELF-LUBRICATED. Flexible rubber neoprene impeller is lubricated by the liquid that is being pumped.

REVERSIBLE. The Jabsco stainless steel pump operates with equal efficiency in either direction.

Carefully designed and constructed for maximum life and serviceability, Jabsco's new stainless steel pump for chemical and food processing applications is available as standard in either 18-8 stainless steel, or monel metal. Model 340 as described above, is available for immediate deliveries - has port connections for 1 1/2" pipe, at both intake and discharge. Here's a new, sturdy and rugged pump that will honestly give you outstanding performance. For more complete information and application data, write to -

JABSCO PUMP COMPANY
2031 N. Lincoln Street • Burbank, California

When inquiring check CP 4404 on handy form, pgs. 2-3

MICRO Precision Switches explosion proof



a small switch for use in explosive atmospheres

You can hold this switch in the palm of your hand, yet it has the electrical capacity to meet requirements as a limit switch, safety switch, control switch and interlock.

MICRO explosion-proof switches are listed by Underwriters' Laboratories for use in locations where explosive atmospheres are present . . . around chemicals, paints, varnishes, starches, pyrolins, and in flour mills and oil refineries.

The housing is a heavy casting. The roller arm actuator provides a possible 360 degrees of adjustment. The roller actuator arm is of non-sparking alloy.

MICRO explosion-proof switches have closely held operating points and small movement differentials.

Electrical capacities as listed by Underwriters' Laboratories are as follows:

125 volts, a-c	10 amperes
250 volts, a-c	5 amperes
460 volts, a-c	3 amperes

MICRO engineers have wide experience in the use of this switch and will gladly aid you, upon request, with any switch problems you may have.



BRANCH OFFICES: CHICAGO 6, 308 W. Washington St.; NEW YORK 17, 101 Park Avenue; CLEVELAND 3, 4900 Euclid Avenue; LOS ANGELES 14, 1709 West 8th St.; BOSTON 16, 126 Newbury St.
SALES REPRESENTATIVES: PORTLAND, ORE., 917 S. W. Oak Street; ST. LOUIS 5, 6625 Delmar; DALLAS, TEXAS, Irwin-Keaser Bldg.; TORONTO, Ontario, Can., 11 King St.

When inquiring check CP 4405 on handy form, pgs. 2-3

New Literature

Describes Methods for Volumetric Determination of Organic, Inorganic Substances

Revised, enlarged second English edition of Vol. 2, "Volumetric Analysis" (388 pages), concerns titration methods: acid-base, precipitation and complex-formation reactions. Text supplements Vol. 1, on "Theoretical Fundamentals," and will be followed by a third volume, to be published this year, on oxidation-reduction methods. Authors: I. M. Kolthoff and V. A. Stenger.

Vol. 2 presents critically selected methods for volumetric determination of inorganic and organic substances, with methods arranged according to type of reaction rather than field of application. Accuracy of customary apparatus, and the limits of accuracy in standardizing the solution, are considered prior to discussion of each process.

Price, \$6. Remit direct to Interscience Publishers, Inc., Dept. CP, 215 Fourth Ave., New York 3, N. Y. Or, when inquiring, specify CP 4406 on handy form, pages 2 and 3.

★

Hydrocarbon Resin for Protective Coatings Resists 1-hr. Fusion with Potassium Hydroxide

Properties, applications and formulae for preparing hydrocarbon resin 510 for use in oleoresinous and furniture rubbing varnishes, zinc chromate and red lead metal primers, aluminum paints, etc., are presented in a 12-page data booklet.

Tabulations show improved drying properties over ester gum and phenolic-linseed oil varnishes, also resistance of 10-gal. length resin 510 varnishes to 5% sodium hydroxide and to distilled water. Product is described as resistant to 1-hr. fusion with solid potassium hydroxide, and having many uses in field of protective coatings. "Resin 510" booklet.

Issued by R-B-H Dispersions, Div. of Interchemical Corporation, Dept. CP, Bound Brook, N. J. When inquiring, specify CP 4407 on handy form, pages 2 and 3.

★

Steam Traps Handle 0 to 250 psi, Discharge 300-6000 lbs. Water per hr., Intermittently

Steam traps, steam separators and other steam specialties for power plants, heating and processing equipment are reviewed and illustrated in a 4-page bulletin. Contents include detailed description of three types of "Airxpel" steam traps for pressures from 0 to 250 psi, discharging at rates varying from 300 to more than 6000 lbs. of water per hr. on intermittent service, or double these rates on continuous discharge.

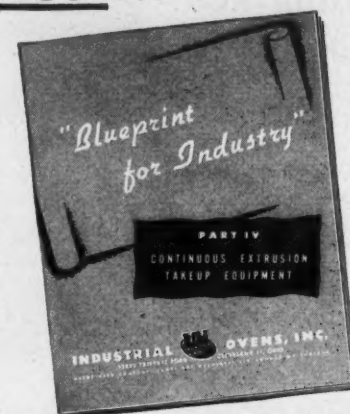
Two types of strainers are included, one for horizontal, vertical or right angle applications. Also safety gauge glass protectors, air relief valve, low water signal. Bulletin CI-47, issued by Wright-Austin Company, Dept. CP, 315 W. Woodbridge St., Detroit 26, Mich. When inquiring specify CP 4408 on handy form, pages 2 and 3.

★

Metering, Self-Cleaning Oil Valves Provide Quick Manual or Automatic Regulation

Self-cleaning, oil-metering valves for straight-line precision control of flow to oil burners are shown and described in a 4-page bulletin. Listed features include quick, accurate, manual or automatic regulation with

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for Better Extrusion!



Complete engineering data on IOI continuous extrusion take-up and accessory equipment is now ready, free for the asking. Industrial Oven's "Blueprint for Industry", Part IV, is a must for all who deal with extrusion of synthetic coated wires, cords, cables, tubing or monofilaments. Write for it today.

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13825 TRISKETT ROAD CLEVELAND 11, OHIO
ASSOCIATED COMPANY, JAMES DAY MACHINERY LTD., LONDON W. 1, ENGLAND

When inquiring check CP 4409 on handy form, pgs. 2-3



Smooth Vibrationless MICHIGAN MACHINED-PITCH PROPELLERS for MIXING or AGITATION

For replacement or original equipment. Perfectly balanced to avoid whip and strain on equipment. Wide range of sizes and metals in 2 and 3 blade models. Free consultative engineering service. Write for details.



MICHIGAN WHEEL CO.
GRAND RAPIDS 3, MICHIGAN

When inquiring check CP 4410 on handy form, pgs. 2-3

New Literature

high or low pressure oil burners, any type of furnace, kiln, oven, dryer, heater, boiler or still.

Literature reports no clogging with any grade of oil, and explains why. Manual types are shown equipped with lever or hand wheel. A variety of dimensions and capacities are tabulated. Bulletin 707, issued by Hauck Manufacturing Company, Dept. CP, 124-136 Tenth St., Brooklyn 15, N. Y. When inquiring, specify CP 4411 on handy form, pages 2 and 3.

★

Rubber and Synthetic Aprons, Gloves, Suits, Coats, Hats and Sleeves Give Protection

Industrial protective clothing is the subject of a 12-page catalog section. Literature pictures and describes both rubber and Koroseal garments, including Koroseal industrial raincoats, acid-proof apron, sleeve protectors, work suits, film and heavy-duty aprons.

Rubberized products include work coats, double-back industrial coats, work suits, worker's leggings, hats, shop and laboratory aprons, dairy and canner's aprons, rubber-canvas work gloves, etc. Catalog Section 12000, issued by The B. F. Goodrich Company, Dept. CP, Akron, O. When inquiring specify CP 4412 on handy form, pages 2 and 3.

★

Fast, Heavy-duty Skin Cleanser Dispenses from Chrome-Plate Steel Container

Formula SBS-11, a heavy-duty skin cleanser, and a chrome plate steel soap dispenser for use with this formula, are described in two separate bulletins. Photographs show results of tests using this industrial cleanser as compared to others. Product is described as fast, thorough, soothing and economical, completely removing soil. Bulletins on Type-R Soap Dispenser and Formula SBS-11 cleanser, issued by Sugar Beet Products Company, Dept. CP, Saginaw, W. S., Mich. When inquiring, specify CP 4413 on handy form, pages 2 and 3.

★

Describes Converters for Induction Heating, Melting; Arc Furnace Transformers, etc.

Equipment for the metal industries is described in an 8-page, illustrated bulletin. Typical subjects covered include high frequency converters for induction heating and melting, arc furnace transformers and control, welding machinery, heavy-duty radiography equipment and precision castings.

Bulletin 25B6773, issued by Allis-Chalmers Mfg. Company, Dept. CP, Milwaukee 1, Wis. When inquiring specify CP 4414 on handy form, pages 2 and 3.

★

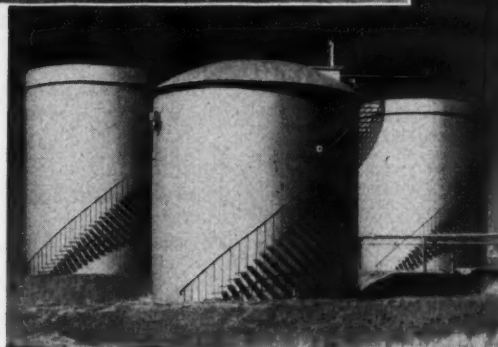
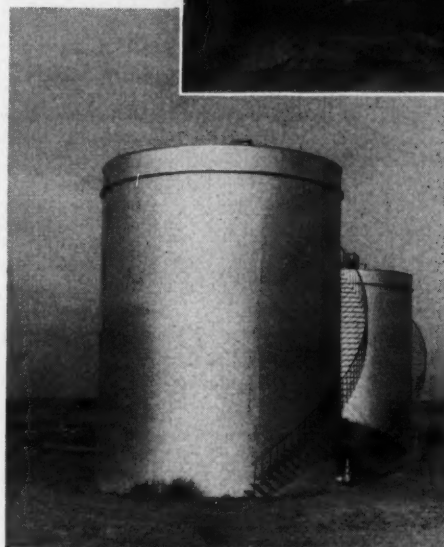
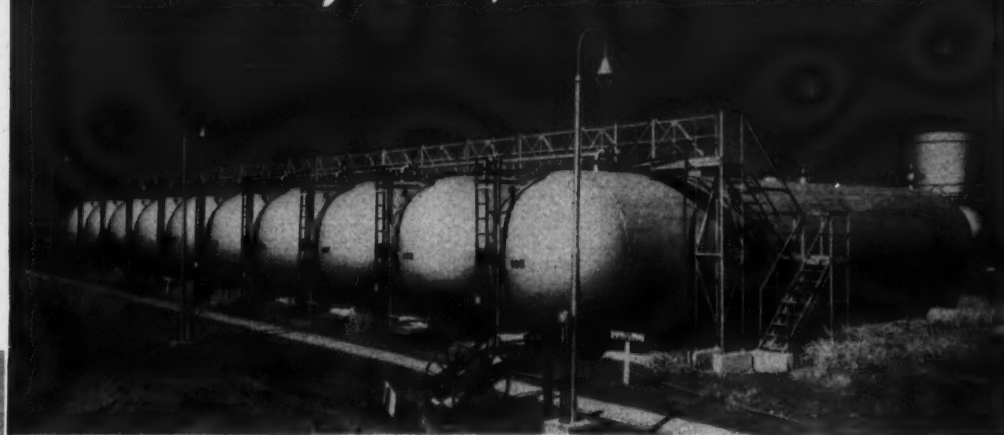
Shows Line of Woven Wire, Metallic Filter, Bolt Cloths; Wire Parts, Testing Sieves

4-page, illustrated bulletin covers complete line of woven wire cloth, metallic filter cloth, metallic bolting cloth, fabricated wire parts, ASTM testing sieves and testing sieve shakers. Title: "Newark Industrial Wire Cloth for Accuracy."

Issued by Newark Wire Cloth Company, Dept. CP, 351 Verona Ave., Newark 4, N. J. When inquiring specify CP 4415 on handy form, pages 2 and 3.

MARCH, 1948

all along the production line



HORTON Steel Storage Tanks

In turning out *better* finished products for consumers and *more* new materials for use by manufacturers chemical and process plants require many types of steel storage tanks *along their production lines*.

Our plants have facilities for designing, fabricating and erecting steel storage tanks to meet exacting requirements in the chemical field. We build structures according to code requirements or to your own specifications.

Pressure storage tanks for liquids or gases, flat-bottom storage tanks, refinery towers and elevated water storage tanks are but a few of the structures we build. When figuring on field-erected tanks or heavy pressure vessels, write our nearest office. We shall be glad to furnish estimating figures without obligation to you.

The storage tanks shown here were built for a chemical plant in Texas. The large photo at the top of the page shows ten cylindrical tanks with hemispherical ends. They are used to store butane. The tanks in the upper left picture store volatile liquids. The view at the left shows three tanks that are used for acetone storage.

Write for your copy of our bulletin —
Welded Steel Tanks for Oil Storage. It
shows table of standard capacities, detailed
drawings of welded joints and other infor-
mation about Horton welded steel tanks.

HORTON
STEEL STORAGE TANKS
designed, fabricated, erected
for the chemical
and process industries

CHICAGO BRIDGE & IRON COMPANY

ATLANTA 3.....Healey Bldg.	HOUSTON 2.....National Standard Bldg.
BIRMINGHAM 1.....North Fifth St.	LOS ANGELES 14.....Wm. Fox Bldg.
CHICAGO 4.....McCormick Bldg.	NEW YORK 6.....165 Broadway Bldg.
CLEVELAND 15.....Guildhall Bldg.	PHILADELPHIA 3 1709 Walnut Street Bldg.
DETROIT 26.....Lafayette Bldg.	SAN FRANCISCO 11 22 Battery Street Bldg.
HAVANA.....402 Abreu Bldg.	TULSA 3.....Hunt Bldg.

Plants at: BIRMINGHAM, CHICAGO, SALT LAKE CITY, and GREENVILLE, PA.

When inquiring check CP 4416 on handy form, pgs. 2-3

Stanzails Now Grip Under Oil



Easier Work

For Safe Hands

● Stanzails' amazing new positive-grip fingers hold wet objects as if dry — new confidence and speed for workers! Sure hand protection in corrosive materials — prevent costly injuries. Made of Pioneer-processed DuPont neoprene, 3 to 7 times longer life than rubber in oils, acids; low cost per hour. Black or white, standard styles, sizes. For more production, buy Stanzails from your supplier — or write for catalog today.

Synthetic Rubber Division

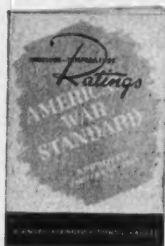
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OVER 30 YEARS OF QUALITY GLOVE MAKING

When inquiring check CP 4417 on handy form, pgs. 2-3

WHAT will a flange stand?



GET THIS BOOKLET

Flange Pressure-Temperature Ratings: This useful booklet gives you the revised standards adopted as a war measure to utilize the full strength of Flanges, Flanged Fittings, and Valves with dimensions according to ASA B16-1939. Mail the coupon.

tt

TUBE-TURN WELDING FITTINGS AND FLANGES

District Offices at New York, Philadelphia, Pittsburgh, Detroit, Chicago, Houston, Tulsa, San Francisco, Los Angeles

TUBE-TURN—T. M.
Reg. U. S. Pat. Off.

Tube Turns, Inc., Dept. 2605, Louisville 1, Kentucky

Please send booklet, "Flange Pressure-Temperature Ratings."

Name

Position

Firm Name

Street

City Zone State

When inquiring check CP 4418 on handy form, pgs. 2-3

Page 64

New Literature

Small, Snap-Action Switches Useful As Safeties, Interlocks, Limits, Controls

One-page data sheet describes and shows small, un-housed, light weight switches for economical snap-action uses. Actuators operate by cam, slide or push-button. Like the manufacturer's plastic-enclosed switches, they are said to possess high electrical capacity and vibration resistance. Useful as safeties, interlocks, limits, controls, etc.

Literature shows various types, tabulates tentative electrical ratings vs. probable life, tentative characteristics, and gives mounting dimensions. Can be gang-mounted. Temporary Data Sheet 41, issued by Micro Switch, Div. of First Industrial Corporation, Dept. CP, Freeport, Ill. When inquiring, specify CP 4419 on handy form, pages 2 and 3.

★

Rotary Leaf Pressure Filters Obtain Polished Filtrate from Liquids with Slow-settling Solids

Application, operation and construction of Conkey Rotary leaf pressure filters are explained in a 4-page bulletin, illustrated with photographs, diagrams and tabulated sizes.

Designed for handling products not applicable to continuous filtration, and wherever batch filtration is desirable, this filter is described as ideal for obtaining clear, polished filtrate from liquids containing slow-settling solids generally classified as suspensions, silts and colloids. Bulletin 105, issued by General American Transportation Corporation, Dept. CP, 10 E. 49th St., New York 17, N. Y. When inquiring, specify CP 4420 on handy form, pages 2 and 3.

★

Rubber-reinforcing Furnace Black Is Subject of Technical Report

Four standard grades of furnace and channel black and three new reinforcing furnace blacks are compared, in this 7-page technical report, with a material currently designed as Experimental Black 13-J. This product is under development, literature explains, with the purpose of obtaining a furnace black capable of reinforcing rubber to the same degree as channel black.

Includes charts of tensile strength, elongation, etc., also tabulated data concerning carbon blacks in GR-S, and carbon and furnace blacks in smoked sheet. Technical Service Report R-5, issued by Witco Chemical Company, Dept. CP, 295 Madison Ave., New York 17, N. Y. When inquiring, specify CP 4421 on handy form, pages 2 and 3.

★

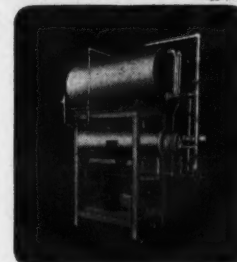
Use Decal Transfers for Lubrication Charts, Wiring Diagrams, Labels, Maintenance

A 12-page booklet, with samples enclosed, tells "What Decals Can Do For You." Literature lists 23 uses, including product and truck identification, lubrication charts, warning and safety signs, operating instructions, wiring diagrams, patent data, maintenance information, serial numbering, service identification, labels of all kinds, trademarks, etc. Features of this line are pointed out. "What Decals Can Do for You."

Issued by The Palm Brothers Decalcomania Company, Dept. CP, Cincinnati 12, O. When inquiring, specify CP 4422 on handy form, pages 2 and 3.

HOW TO MAKE Extra PROFITS with a

SCHAUB Heat Reclaim SYSTEM



Money saved is profits earned. A Schaub Heat Reclaim System gives you more steam from the same fuel... or the same steam from less fuel. Here's how:

- "Flash" steam — paid for as fuel — is reclaimed and re-used.
- All heat units above 212° in the high pressure returns are recovered and put to work again.
- With Schaub "Heat Reclaim" feed water temperatures range from 240° to 260°.
- Automatic boiler water level and make-up are provided.

Get the facts. Write today for full information.

SCHAUB SYSTEMS The Key to Boiler Room Efficiency

FRED H. SCHAUB ENGINEERING CO., INC.

2113 South Marshall Boulevard • Chicago 23, Illinois

When inquiring check CP 4423 on handy form, pgs. 2-3

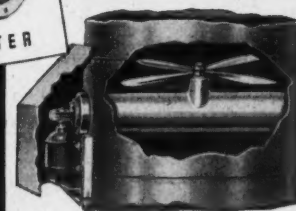
Solve your Ventilating Problems with INTERNATIONAL

DUCT BOOSTERS
STACK FANS
AND BLOWERS



DUCT BOOSTER

If you have a problem of forced draft or ventilation, send for descriptive literature showing typical installations in ships and industrial plants, apartment houses and public buildings.



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NEW YORK, 15 PARK ROW—CHICAGO, 407 S. DEARBORN

When inquiring check CP 4424 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

PERFECT Stainless TWINS Permanently Identified

P. P. & E. STAINLESS STEEL WELDING FITTINGS . . .

Every P. P. & E. stainless steel welding fitting is permanently identified with Stainless Type number and "stock lot" number. Years after a fitting has been produced, we can quickly refer to the exact analysis of the steel used, and to all other pertinent data. Thus, you are assured that fittings purchased over a period of time will be uniform—in analysis of stainless steel, and in every other specification.

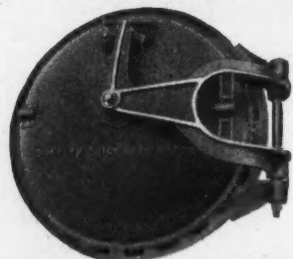
This carefully-recorded "pedigree" is indispensable when you enlarge, remodel, or re-adapt your stainless piping system.

STAINLESS ALLOY DIVISION
PITTSBURGH PIPING AND EQUIPMENT COMPANY
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World's Largest Manufacturer of
Stainless Steel Welding Fittings

When inquiring check CP 4425 on handy form, pgs. 2-3

NE SIMPLEX QUICK OPENING DOORS



for VULCANIZERS - STERILIZERS - AUTO- CLAVES, ETC. 18 to 120 Inches Diameter



Specify Simplex Quick-Opening Doors for faster entry to vulcanizer or other vessels. One man opens and closes the Simplex Door in a few seconds. These doors are regularly made of cast carbon steel but for food and other process industries we make them in stainless or other material. All Simplex Doors meet code and Insurance requirements. Write for booklet SD.

NATIONAL-ERIE CORPORATION
ERIE, PA., U. S. A.
EXTRUDERS, STRAINERS, MILLS, PRESSES FOR RUBBER AND PLASTICS

When inquiring check CP 4426 on handy form, pgs. 2-3

MARCH, 1948

New Literature

Use Steam Jet Heaters for High Velocity Tank Cleaning, Slurry Heating, etc.

Steam jet heaters for liquids are the subject of a 20-page catalog. Three-color illustrations and text describe various steam jet heaters and sparger nozzles, with general information on their construction and operation. Tables and drawings give full data on dimensions, connection sizes, weights and piping arrangements. Typical applications are shown, explained.

These include high velocity tank cleaning, automatically-controlled continuous, slurry and gas holder heating. Bulletin 3-A, issued by Schutte and Koerting Company, Dept. CP, 12th & Thompson Sts., Philadelphia 22, Pa. When inquiring, specify CP 4427 on handy form, pages 2 and 3.

★

Platform, Pallet and Telescopic Motorized Hand Lift Trucks Included in Full Line

Platform, pallet and telescopic models are included in full line of motorized hand lift trucks presented in illustrated, 8-page bulletin. Features stressed in different models include roller-type control handles, interchangeable motor units, electric and foot-operated hydraulic pumps, front wheel drive, low gravity, 4-wheel load suspension and hinge-action front ends. Includes application photos, dimensional diagrams, etc. All telescopic models are 2000-lb. capacity.

Bulletin 47-A, issued by Moto-Truc Company, Dept. CP, 1953 E. 59th St., Cleveland 3, O. When inquiring, specify CP 4428 on handy form, pages 2 and 3.

★

Operation, Care of Metal Working Lathes Described in 128-page Manual

Latest information on operation and care of metal working lathes is contained in a 128-page handbook, size 5 1/8" x 8". Typical subjects covered include operation of lathe units, grinding cutter bits, making accurate measurements, plain turning, chuck work, taper turning, boring, drilling, reaming, tapping, cutting screw threads. Complete with reference tables and more than 365 illustrations. 45th edition.

Postpaid with paper covers, 25c, or with leatherette covers, \$1. Title: "How To Run A Lathe." Remit direct to South Bend Lathe Works, Dept. CP, 355 E. Madison St., South Bend 22, Ind. Or, when inquiring, specify CP 4429 on handy form, pages 2 and 3.

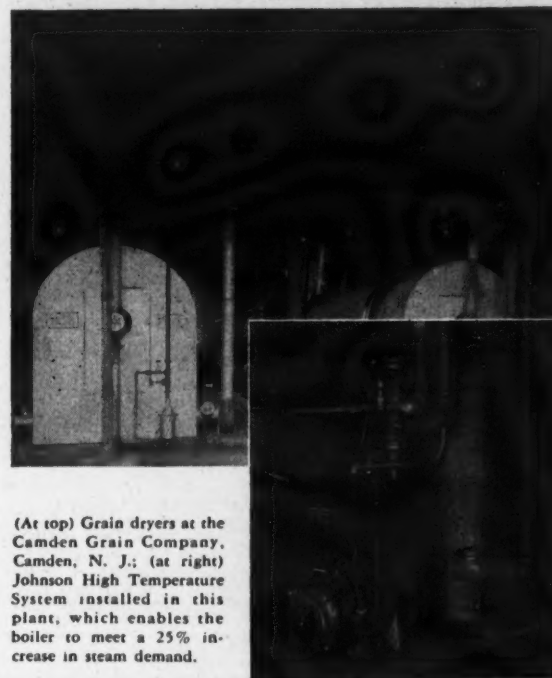
★

Forged Boiler and Tank Accessory Guide Covers Manhole, Handhole Covers, Ells

Forged boiler and tank accessories, also technical data and general information, are presented in a 20-page booklet. Contains illustrations, dimensional drawings, tables of weights and sizes, descriptive information on manhole and handhole covers and yokes, welding street and water column ell.

Comparable designations give chemical propositions and tensile properties of products, also hydrostatic test data. Information is contained concerning curving hand-hole covers. Catalog 11, issued by The Steel Improvement & Forge Company, Dept. CP, 970 E. 64th St., Cleveland 14, O. When inquiring specify CP 4430 on handy form, pages 2 and 3.

BOILER OUTPUT INCREASED 25%



(At top) Grain dryers at the Camden Grain Company, Camden, N. J.; (at right) Johnson High Temperature System installed in this plant, which enables the boiler to meet a 25% increase in steam demand.

This installation shows the remarkable increase in thermal efficiency achieved by the JOHNSON BOILER FEED SYSTEM . . .

Originally, in the Camden Grain Company plant, there were three grain dryers such as shown in the picture above. They were supposed to be supplied with steam at 125 lbs. pressure. But with a steam driven boiler feed pump, which couldn't handle the hot dryer condensate until valuable heat units had been dissipated, the boiler couldn't satisfactorily maintain such an output.

Today the operating picture has changed. Today the steam pump has been replaced with the Johnson High Temperature System of boiler feeding. No longer are there only three dryers. A fourth unit has been added, increasing production—and steam demand—about 25%. Yet the Johnson System, by returning condensate while it is still hot, enables the same boiler to maintain a full 125 lbs. pressure in all four dryers.

Such an increase in thermal efficiency is not surprising to hundreds of plant operators who know first-hand the revolutionary economies of the Johnson High Temperature System. In the above installation the heat units saved permit greater boiler output; in other cases they can mean direct fuel savings of as much as 15%. And hand in hand goes a big slash in power pumping cost—as much as 60%.

So substantial are such savings that the Johnson System can often pay its own cost in less than one year. Yet this is achieved entirely by means of simple, sound, long-accepted operating principles. Now is the time to replace over-worked equipment, and to compare your present equipment with this new standard of boiler feeding cost and efficiency. Our nearby representative will show you exactly what the Johnson System can mean in your plant. Write us today.

Johnson High Temperature System can be used with all boilers up to 200 lbs. operating pressure. Single units available in sizes for boilers from 30 to 500 hp., multiple units for larger boilers.

The Johnson Corporation
826 WOOD STREET, THREE RIVERS, MICHIGAN

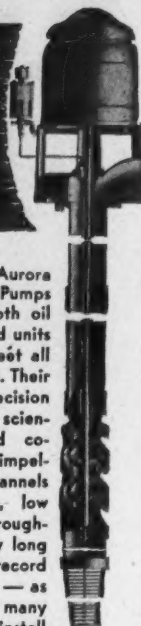
When inquiring check CP 4431 on handy form, pgs. 2-3

Where
Streamlining
Pays Dividends
**DEEP WELL
TURBINE PUMPS**
"by Aurora"

Sizes
4" to 24"

**AURORA
CENTRIFUGALS**
for Every
Pumping Job
**HORIZONTAL
SPLIT CASE**
Single & Two Stage
**SIDE SUCTION
VERTICAL
NON CLOG
SUMP
MIXED FLOW
DEEP WELL
TURBINES**
SPECIAL DESIGN
Write for
CONDENSED
CATALOG "M"
or
Consult
SWEETS

These outstanding Aurora Deep Well Turbine Pumps are available in both oil and water lubricated units as desired — to meet all operating conditions. Their sturdiness and precision manufacture plus scientifically streamlined co-ordination between impellers and water channels insure dependable, low cost water supply throughout an exceptionally long service life. Their record is one of high merit — as evidenced by the many Aurora users who install additional Auroras to meet expansion requirements.



DISTRIBUTORS IN PRINCIPAL CITIES



AURORA
PUMP COMPANY

62 Loucks Street, AURORA, ILLINOIS

When inquiring check CP 4432 on handy form, pgs. 2-3

New Literature

Carbon Tetrachloride Has Many Uses, Booklet Reveals; Lists Properties

Properties and uses of carbon tetrachloride are discussed in a 32-page booklet of technical and general data. Intended as a reference book for users of this product, literature reviews fully the approved instructions for its safe handling and use, describing applications for fire extinguishers, metal and general degreasing, leather and textile cleaning, extraction and general solvent, lacquers, rubber and rubber cement, etc.

Technical phases include specifications, physical properties, azeotropic mixtures, vapor pressure-temperature relationship with other chlorinated hydrocarbons, stability, action on metals, etc. Title: "Carbon Tetrachloride," issued by Stauffer Chemical Company, Dept. CP, 420 Lexington Ave., New York 17, N. Y. When inquiring specify CP 4433 on handy form, pages 2 and 3.

★

Propane-Butane Hose Moves Volatile Liquefied Gases Between Storage and Tank Car

Propane-butane hose for handling highly volatile petroleum gases in liquefied form from bulk storage to tank car, and from tank car to home storage tanks, is subject of a descriptive folder.

Constructed to withstand extremely high pressures, product is described as consisting of multiple plies of high-tensile, closely-woven cotton duck bonded by layers of oil-resisting rubber. Nonporous, synthetic rubber

tube is specially compounded to resist permeating action of gases. A spiral of static dissipating steel wire, embedded within hose wall, extends throughout length.

Monarch Propane-Butane Hose folder, issued by Hewitt-Robins Inc., Hewitt Rubber Division, Dept. CP, 240 Kensington Ave., Buffalo 5, N. Y. When inquiring, specify CP 4435 on handy form, pages 2 and 3.

★

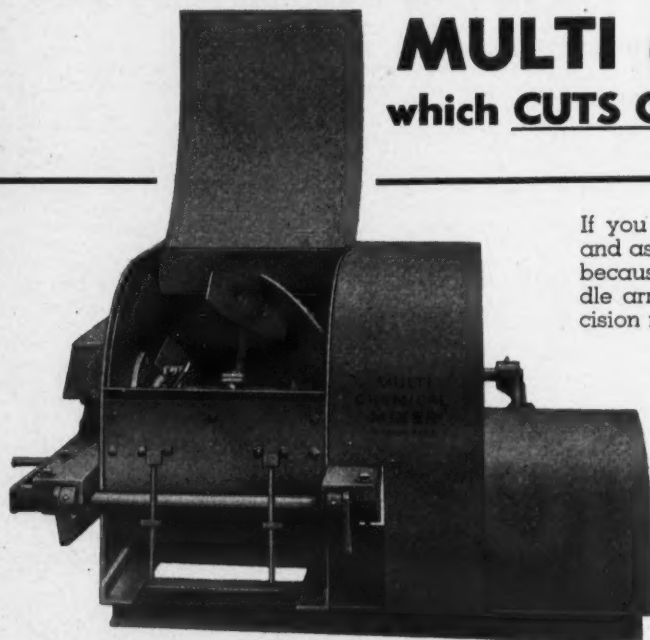
Tabulates Flash Point, Boiling Range, etc., of Various Metal Cleaning Solvents

Various petroleum, aromatic and chlorinated hydrocarbon solvents commonly used in metal cleaning are discussed in a 4-page booklet. Tabulation of flash points, boiling ranges, chemical constitution, toxicity and other important factors aids selection of the solvent best suited for a specific job.

Literature discusses the effect of various solvent groups on particular soils and gives reasons for rapid acceptance of emulsion cleaning by industry. Flash points are given for each of these solvents mixed with Actusol, an emulsifiable oil detergent which raises the flash of combustible solvents and provides skin protection. Actusol is said to augment solvent power, emulsify insoluble soils, and provide water rinsability in solvent cleaning operations.

Solvent booklet issued by The DuBois Company, Dept. CP, Cincinnati 3, O. When inquiring specify CP 4436 on handy form, pages 2 and 3.

It's the Paddle Arrangement in **MULTI Chemical MIXERS** which CUTS COST and SAVES TIME



If you need a mixer that will save cost, save time and assure a perfect blend, you need a Multi-Mixer, because the Multi-Mixer has a special type of paddle arrangement which not only guarantees a precision mix but is designed to **prevent** the drag of the material against the liners, thus **reducing friction** which is so costly in power waste and repair bills. If you have a mixing problem, the chances are Multi-Mixer will solve it. Write for new descriptive literature.

- Sizes from 3 to 60 cubic feet
- Side, end or bottom discharge
- For all kinds of chemical mixtures
- 5 styles of drives
- Replaceable liners and paddles

THE MULTIPLEX CONCRETE MACHINERY CO.
ELMORE, OHIO

Specializing in Satisfactory Service Since 1906 on Complete Concrete Plant Equipment

When inquiring check CP 4434 on handy form, pgs. 2-3

NON-SLIP REINFORCED FINGERS · PALM · THUMB CROTCH

Genuine Natural Rubber INDUSTRIAL GLOVES



Highly desirable for workers who handle wet, slippery objects. Heavy gauge, steam-cured, genuine natural rubber. High age-resistance and exceptional durability. The outstanding value and hand safety specification throughout industry.

* NO. 5621 FIRM-GRIP STYLE

LENGTH: 14 inches
GAUGE: .045-.055
COLOR: Brown
SIZES: 10, 11, 12
Also available in smooth finish
(No. 5415)

* Request sample and quotations.

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AKRON, OHIO
200 - 5th Ave Bldg., New York Merchandise Mart, Chicago

When inquiring check CP 4437 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

Now you can STANDARDIZE

WITH THIS NEW EDWARD

STEEL STOP VALVE!

For the majority of services where forged steel stop valves are required you can standardize on these Edward designs. Lower pressure loss, oversize handwheels for easy operation, borized seats and disks in mated pairs for drop tight closure, and EValized bonnets are but a few of the features of these valves.

A WIDE SELECTION

- ... Types
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Stellite hard faced
- ... Ease of Installation
Screwed or Socket Weld-
ing Ends
- ... Low Pressure Loss
Edward streamlined flow
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1/4 in. to 2 in. both Globe
and Angle
- ... ASA Working Pres-
sure Ratings
600 lb up at 850 F Series
1500 lb up at 850 F Series
Hydraulic Service up to
3600 lb at 100 F



Full details
in Edward
Catalog 103

Edward Valves, Inc.
SUBSIDIARY OF ROCKWELL MANUFACTURING COMPANY
EAST CHICAGO, INDIANA

When inquiring check CP 4438 on handy form, pgs. 2-3

New Literature

"Commercial Waxes" Subject of 583-Page Book

Natural and synthetic waxes and wax-like materials are the subject of a 583-page book. Discusses animal, mineral, vegetable, insect, synthetic and compounded waxes. A section is devoted to handling and compounding.

Gives data on melting point, form and fracture, adhesiveness, solubility etc., including sources, uses. Tables cover compatibility of waxes with each other and with resins, plastics, etc. Contains glossary of terms and wax formulary. Title, "Commercial Waxes." Price, \$11.

Remit direct to Chemical Publishing Company, Inc., Dept. CP, 26 Court St., Dept. 36, Brooklyn 2, N. Y. Or, when inquiring, specify CP 4440 on handy form, pages 2 and 3.

*

Gear Chuck Advantages and Applications Shown

Pitch line control and draw bar-operated bevel gear chucks are subjects of two 4-page, illustrated bulletins. Literature on former shows simplicity of mounting and describes features, uses. 8 installation photographs are shown.

Literature on draw bar-operated chuck for job-lot and mass-producers of bevel gears illustrates and describes typical applications, special mountings. Photographs show bore and back face, also bore and spherical radius, ground at one chucking. Forms 1181 and 1183, respectively, issued by Garrison Machine Works, Inc., Dept. CP, 515 Bannock St., Dayton 4, O. When inquiring specify CP 4441 on handy form, pages 2 and 3.

*

86-Page Material Handling Guide Has 5 Sections

Power and hand-operated material handling equipment is shown, described, in an 86-page catalog, file-tabbed for quick reference.

Five sections cover power fork trucks, power jacklifts, stackers and cranes, hand-operated lift trucks; floor trucks, skid platforms and storage racks. Also presents large selection of specially-built equipment. Catalog 23.

Issued by Lewis-Shepard Products Inc., Dept. CP, 290 Walnut St., Watertown 72, Mass. When inquiring specify CP 4442 on handy form, pages 2 and 3.

What Are Your PROCESSING NEEDS

STANDARD
EQUIPMENT?

SPECIAL
UNITS?

COMPLETE
PLANTS?

I*P*E Furnishes All Three

—backed up with experienced engineering skill, expert design and precision manufacturing.

I*P*E's "standard-plus" line has progressed beyond the accepted meaning of the word "standard." Every equipment item was special when originally designed—built to meet specific needs—and now is included in—

THE I*P*E "STANDARD-PLUS" LINE

PROCESSING EQUIPMENT



—Order a STILL and you'll get the outstanding advantages of a special engineered job. This is also true for I*P*E

KETTLES—DISSOLVERS—SOAP and
GREASE CRUTCHERS—
SCREW TYPE EXTRUDERS—
NITRATORS
SULFONATORS—CRYSTALLIZERS

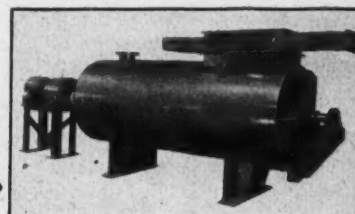
THE I*P*E STILL

MIXING EQUIPMENT

—Here's a mixer developed for use with materials having the tendency to lump—a special job that is now "standard-plus." Other I*P*E mixers with outstanding features are

CONTINUOUS MIXERS—
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I*P*E HORIZONTAL JACKETED MIXER



AGITATORS

—There's an I*P*E agitator for every mixing need—TURBINE TYPE—PADDLE TYPE—VERTICAL FINGER TYPE—PROPELLER TYPE—ANCHOR TYPE—RIGHT ANGLE VERTICAL AGITATOR DRIVE.



THE I*P*E SIDE ENTERING PROPELLER AGITATOR

SPECIAL UNITS AND COMPLETE PLANTS—I*P*E staff of process plant analysts, engineers and designers welcome your inquiry for special needs. No obligation.

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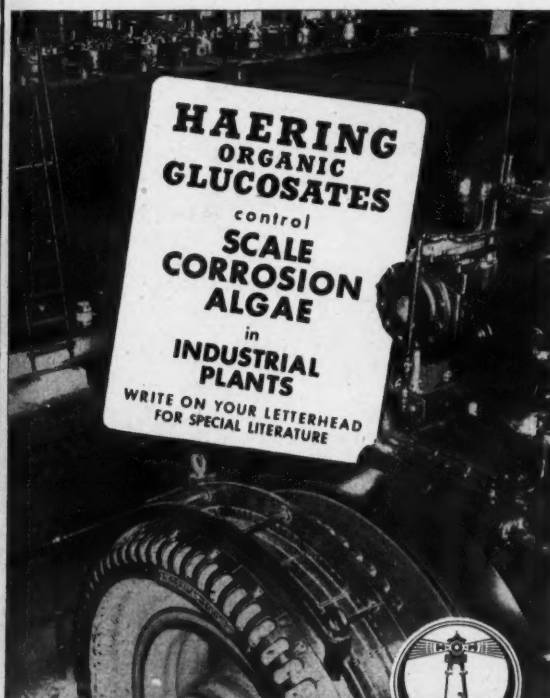
When inquiring check CP 4443 on handy form, pgs. 2-3

HAERING ORGANIC GLUCOSATES

control
SCALE
CORROSION
ALGAE

in
INDUSTRIAL
PLANTS

WRITE ON YOUR LETTERHEAD
FOR SPECIAL LITERATURE



D. W. HAERING & CO., Inc.

GENERAL OFFICES
205 West Wacker Drive, Chicago 6, Illinois

When inquiring check CP 4439 on handy form, pgs. 2-3

for
HOT
filtration . . .

Nylon FILTER CLOTH

These are its advantages

- High Heat Resistance
- Exceptional Tensile Strength
- Exceptional Abrasion Resistance
- Excellent Resistance to Fungi
- Diversified Chemical Resistance

Perhaps Nylon Filter Cloth is the answer to one of your hot filtration problems. Its melting point is 482°F. and, while the composition and concentration of the solution being filtered affect its resistance in varying degrees, it can be generally classified as having excellent heat resistance.

Write for literature and pilot test samples of FM Nylon Filter Cloth today.

NATIONAL FILTER MEDIA Co.

Sales Division of FILTER MEDIA CORPORATION
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SALES OFFICES

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2627 West 19th Street
Chicago 8, Illinois

1008 Keith Building
Cincinnati 2, Ohio

When inquiring check CP 4444 on handy form, pgs. 2-3

New Literature

Vertical Pressure-Leaves Filter Soaps, Acids, etc.

Pressure leaf filters for soaps, varnish, beer, resins, cutting, lubricating and vegetable oils, Buna S. latices, acids, etc., are described in a 6-page bulletin.

Includes flow diagram, isometric drawings, piping lay-out and installation photograph of horizontal-plane cylindrical tank containers with vertically suspended filter leaves. Filter sizes and average flow rates are presented, along with full description. Pressure Leaf Filter Bulletin.

Issued by Hercules Filter Corporation, Dept. CP, 204 21st Ave., Paterson, N. J. When inquiring specify CP 4445 on handy form, pages 2 and 3.

*

Data Helps Prepare Chlordane Emulsifiable Concentrates

Data and information concerning preparation of Chlordane emulsifiable concentrates for insecticidal use is contained in a 17-page mimeographed technical supplement.

High, moderate and low stability emulsions are considered. Tabular information of value to formulators is presented. Technical supplement No. 2, issued by Julius Hyman & Company, Dept. CP, Denver, Colo. When inquiring specify CP 4446 on handy form, pages 2 and 3.

*

Describes Preparation of 37 Organic Chemicals

The 27th annual volume of "Organic Syntheses," giving satisfactory methods for the preparation of organic chemicals, is 122 pages, cloth-bound, size 6 x 9".

37 procedures, with notes and methods of preparation, are described. Includes 26-page subject index for volumes 20-27. Edited by Ralph L. Shriner. Price, \$2.25. Remit direct to John Wiley & Sons, Inc., Dept. CP, 440 Fourth Ave., New York 16, N. Y. Or when inquiring, specify CP 4447 on handy form, pages 2 and 3.

*

Offers Conveyor Belting for Brutal Use, Added Tonnage

4-page, vest-pocket bulletin describes straight-ply, stepped-ply and shock-pad conveyor belting for brutal service, increased tonnage.

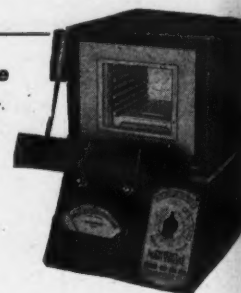
Listed features include resistance to

Be Sure of ACCURATE RESULTS Always!

Maintain any temperature
on-the-line automatically
from 325° to 1600° F.

HUPPERT Model 2 DeLuxe FURNACE

For laboratory tempering, annealing, testing, etc. or precision small unit production. The Model 2 DeLuxe features two pilot lights to indicate furnace operation and throttling action; multi-insulation; all-steel construction; Fahrenheit or Centigrade pyrometer; special alloy elements, and tight closing counterweighted door. I.D. 4 1/4" x 3 3/4" x 4 1/4"—O.D. 12" x 13" x 12". Current consumption 800 watts.



Complete with
pyrometer and
automatic control

\$75.00

Request catalog of complete
line of laboratory and flow
model furnaces.

K. H. HUPPERT CO.

6822 Cottage Grove Avenue

Chicago 37, Illinois

When inquiring check CP 4448 on handy form, pgs. 2-3

SAFE • CONVENIENT
FAST • DURABLE

MANUALLY OPERATED ACID PUMP

FOR CARBOYS...
DRUMS AND BARRELS

A smooth flow of 2 gal. per min. starts quickly . . . no dangerous spurts or splashes. Fumes are minimized. Acid and other liquids contact only corrosion-resistant tube. Lifting and tilting of carboys or drums is eliminated. No dangerous pressure and flow can stop instantly.

Equipped with flexible Saran tubing and adapter for openings larger than 2 1/4". For sulphuric, hydrochloric, hydrofluoric, nitric, phosphoric, acetic, formic acids, alcohol, formaldehyde, vinegar, wines, peroxide, and many others.

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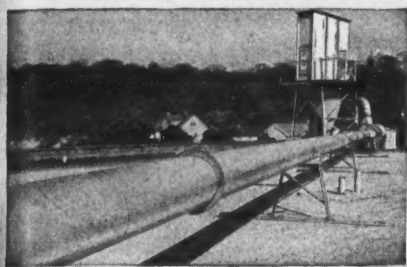
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RESPIRATORS • PUMPS • GOGGLES • SHIELDS • GLOVES • APRONS • HELMETS

When inquiring check CP 4449 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview



AIR-BORNE DrugsTM by KIRK & BLUM

Finely-ground drugs move through the air with the greatest ease at the plant of the Wm. E. Merrill Co., pharmaceutical manufacturers of Reading, Ohio. The original nine-year-old system was recently modernized to meet expanded production needs. Drugs now are carried approximately 500 feet through the pipe shown.

This is but one example of the way Kirk & Blum Engineers put air to work, serving the needs of industry. The experience of more than forty years is at your command . . . what is your problem?

FOR CLEAN AIR... THE INVISIBLE TOOL

KIRK & BLUM

The Kirk & Blum Mfg. Co.

2833 Spring Grove Ave.

Air Handling Systems

Cincinnati 25, Ohio

Dust and Fume Control Systems

When inquiring check CP 4450 on handy form, pgs. 2-3

We Have IT



BLACK & WHITE

● The important story of this radically simpler, more economical device for the continuous removal of condensate, air and non-condensable gases from steam lines.

This advanced steam trap, with no moving parts is free of valves, bellows and floats.

The Coe Drainator Bulletin No. 903-B will prove of interest and value to you whether your trap problems concern paper machinery, water heaters, heating systems, process dryers, cookers, distilling equipment or laundry and dry cleaning equipment, etc.

Write for Bulletin 903-B

The COE MANUFACTURING CO.
503 BANK STREET • PAINESVILLE, OHIO



DRAINATOR • THE ADVANCED STEAM TRAP

When inquiring check CP 4451 on handy form, pgs. 2-3

MARCH, 1948

New Literature

mildew, abrasions, ageing, heat. Described as high flexing, perfect troughing, in all widths or plies. Also special construction for hot materials. Form 123.

Issued by Hewitt-Robins Inc., Hewitt Rubber Div., Dept. CP, 240 Kensington Ave., Buffalo 5, N. Y. When inquiring specify CP 4452 on handy form, pages 2 and 3.

★

Lists Causes, Remedies for Hot-Running Welding Cables

Causes and cures for hot-running welding cables and connections are revealed in a 2-page leaflet. Lists the spots to check for troubles, with helpful hints for correcting them. Gives rules to follow for efficient operation of cables, saving wasted current.

Form CC-47, issued by Tweco Products Company, Dept. CP, P. O. Box 666, Wichita 1, Kas. When inquiring specify CP 4453 on handy form, pages 2 and 3.

★

Rotary Sifters Are 1/2, 3/4 and 1 hp

1/2, 3/4 and 1 hp rotary sifters, each in 1, 2 and 3-sieve models, are described and shown in a 12-page catalog-section. Literature includes schematic and dimensional diagrams, also photographs.

Construction, operation and installation are discussed. There are two full pages of comparison tables for wire, silk and grit gauze sifting cloth. Catalog No. 101, Section "S," issued by B. F. Gump Company, Dept. CP, 431-437 S. Clinton St., Chicago 7, Ill. When inquiring specify CP 4454 on handy form, pages 2 and 3.

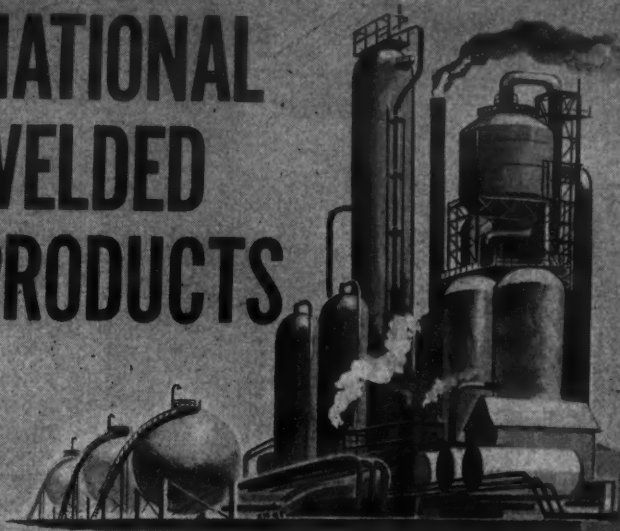
★

Reveals Latest Data On Polyethylene Glycols

Latest data on "Carbowax" compounds and polyethylene glycols for water soluble lubricants, cosmetics and ointments, emulsifying agents, adhesives and paper coatings are included in condensed form, in a 16-page publication.

One of a series of publications describing chemicals in the important aliphatic groups. Form 4772, issued by Carbide and Carbon Chemicals Corporation, Dept. CP, 30 E. 42nd St., New York 17, N. Y. When inquiring specify CP 4455 on handy form, pages 2 and 3.

NATIONAL WELDED PRODUCTS



FOR
CHEMICAL PLANTS
PETRO CHEMICAL PLANTS
REFINERIES
STEEL INDUSTRIES



Pressure Vessel
8' 8" x 10' 4 1/2" long.
A.S.M.E. Code—U-2B.
Plate thickness 3/4"

Dependability is the by-word for National Welded Products. It is built into every phase of engineering and production—to assure you of pressure vessels and other fabricated equipment that meets exacting codes and requirements. Let us work with you in solving your difficult fabricating problems.

FROM
OPEN HEARTH,
STAINLESS,
ALLOY AND CLAD
STEELS

NATIONAL PRODUCTS

Pressure Vessels
Galvanizing Kettles
Annealing Covers
Tin Pots
Salt Annealing Pots
Wire Annealing Pots
Special Welded Tanks

Pressure Vessel
Section 54" I. D.
x 11' 8 1/2" long.
Plate thickness 3/4"

National
ANNEALING BOX COMPANY

API-ASME Codes • Stress Relieving • X-ray
Pledged to Quality Since 1895
WASHINGTON, PENNA.

When inquiring check CP 4456 on handy form, pgs. 2-3



Check List of places where a
PREMIER COLLOID MILL
 improves your

- ✓ Dispersing
- ✓ Disintegrating
- ✓ Emulsifying
- ✓ Homogenizing

A versatile, adaptable mill of proven acceptance, the Premier Colloid Mill is an efficient and economical answer to many processing operations.

Dispersing solids in liquids and liquids in liquids, Premier insures more finely divided colloidal suspensions and promotes immediate chemical reaction...*Disintegrating* solid particles or the fibre and cellulose in animal or vegetable tissue — instantly exposing these particles to the wetting or extractive action of the suspending liquid...*Emulsifying* — achieving non-separating emulsions of all viscosities...*Homogenizing* — assuring superior homogenized products by compelling uniform distribution of the dispersed phase throughout the mix.

If your type of work is shown in the partial check list above, write for our descriptive catalog, using coupon below. If not, write and tell us what your processing problems are, and we'll tell you how we can help you.

PREMIER MILL CORPORATION
 403 Genesee Street, Geneva, N. Y.

SEND DESCRIPTIVE CATALOG

NAME _____ TITLE _____

COMPANY _____

ADDRESS _____

FLUID _____

When inquiring check CP 4457 on handy form, pgs. 2-3

Page 70

Processing Equipment

Non-Clogging, Self-Cleaning Cord Filter Provides More Capacity

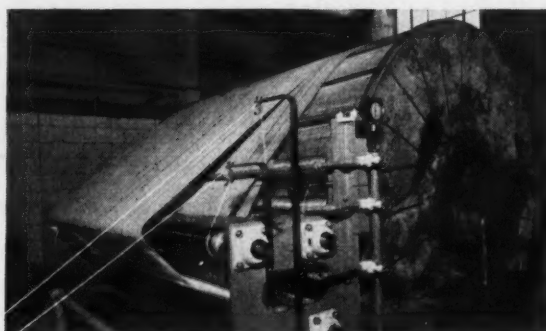
Handles "hard-to-filter" products that often choke filters

USES — As a practical solution to the handling of materials capable of rapid putrescence; when slurry lime alkalinity composition produces carbonate scale; or where penetrating fines clog up the filter cloth or for underdrainage of standard filters. For service in most chemical manufacturing processes and in many food processes, such as instances where soluble impurities must be washed from the filter cakes.

FEATURES — Handles "hard-to-filter" products. Can provide increased capacity in operations where the filter cloth normally clogs up; where the objective is to de-water sedimentized sludge; where mining ore concentrates have to be shipped, or when the filter cake is to be dried.

Distinctive in the design of this continuous, non-clogging self-cleaning filter is the continuous light cord, united by one spliced joint, wound around the drum and over a series of aligning rollers to form two sets of cords. One set of cords provides a grooved base. The second set fits closely over the grooves, forming a virtual new "corduroy" cloth washed with each revolution.

DESCRIPTION — This filter has no web or cross members... only two sets of warp members. The cords travel in a deploying movement, similar to the conventional rope drive for power transmission. However, in some instances all sheaves are eliminated. The cords travel with the drum, without any movement on the



Cord filter attachment partially completed. In plain view are aligning rolls and separation of under & upper sets of cords for cake discharge

drum. The deploying cords revolve on the drum in a movement which permits the cord lying in groove number one to take a position in groove number two on the next revolution. Thence it progresses across the face of the drum, left to right, until it reaches the last position.

The original porosity is restored at every new exposure to the material to be filtered. No filtration is obtained through the cords themselves. The interstices for filtration are the openings at the edge of the abutting cords. Cake discharge is 100%, decorded readily by means of gravity during the phase of the revolution where cords go over the bottom of the roller. The few adhering solids are removed by fan spray during each revolution. It is not necessary to relieve the vacuum of the com-

partment when it is discharging its cake. There is no blow-back, or any atmospheric break for discharge, or any scraper or re-inforcing means for discharging the cake.

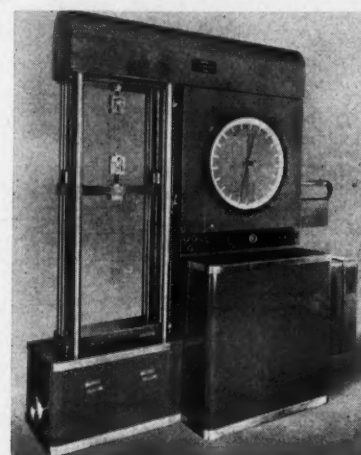
Existing filter installations can be modernized by applying this cord filter medium without the costs of filter foundations, filter piping, electrical conduits, cake conveyors and auxiliaries.

SOURCE — This filter is a development of Arthur Wright & Associates, Dept. CP, 113 Bellevue Ave., Upper Montclair, N. J. . . or for more information check CP 4458 on the handy form, pages 2 and 3.

★

Precision-tests Plastics, Rubber, Textiles, Non-ferrous Metals

5000-lb. cap. Baldwin-Tate-Emery machine offers continuously-variable 400:1 speeds



USES — Machine for precision testing of plastics, rubber, non-ferrous metals, textiles, fibers, similar materials. For use with manufacturer's standard accessories such as Templin grips, Baldwin extensometers, compressometers, deflectometers, subpresses and flexure tools, special grips for various materials.

Also for use with new Baldwin Microformer types of

5000-lb. capacity precision tester

strain-followers and stress-strain recorders.

FEATURES — Continuously-variable 400:1 positive speed range. Great horizontal rigidity. Complete elimination of backlash. High accuracy even in lowest ranges. Manufacturer guarantees indication accuracy "better than 1/2% of reading or 0.1% of range, whichever is greater."

DESCRIPTION — A new type of Baldwin-Tate-Emery testing machine, being one of 4 built for Monsanto, Goodrich, U. of Minn. and US Bureau of Standards. Maximum capacity, 5000 lbs.

Instead of the hydraulic loading system employed by larger-capacity models of this line, the machine has a mechanical screw system. Loading crosshead is driven by 2 screws which pass through nuts in crosshead. Screws are rotated by 1 to 1, 10 to 1 gear transmission driven by variable-speed motor with GE Thymotrol control. Loading speed varies steplessly from 0.05 to 20" per min., can be held constant within plus-minus 2%.

Emery capsule, used in weighing system of most Baldwin testing machines, is replaced by 100:1 mechanical compound lever using flex plates instead of conventional knife edges at load points and fulcrums. Specimen

CHEMICAL PROCESSING Preview

is pulled, compressed or flexed at short lever end. Long end operates force balance mechanism or indicating system. With this exception, indicator is, in general, the standard Tate-Emery type used on most Baldwin machines. Four ranges include: 5000 lbs. in 5-lb. units; 0-1000 lbs. in 1-lb. units; 0-200 lbs. in 0.2-lb. units; 0-50 lbs. in 0.05-lb. units.

Range change is by conventional rotating mask and special iso-elastic spring units, designed for rapid replacement. Zero adjuster, range selector, maximum dial hand, load rate pacing disc, etc., are included.

SOURCE — Product of The Baldwin Locomotive Works, Dept. CP, Philadelphia 42, Pa., or for more information check CP 4459 on handy form, pages 2 and 3.

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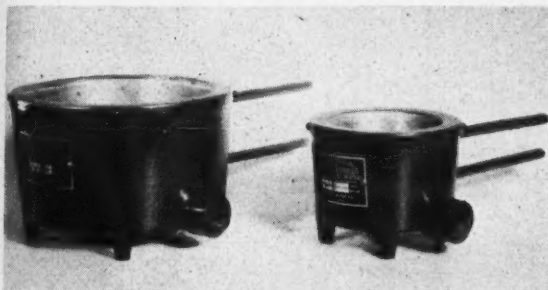
Laboratory Oil Baths Have No Hot or Cold Spots

Electrically-heated units can be used continuously; operate at black heat

USES — Electrically-heated oil bath pots for laboratory use. Accommodate flasks, beakers, etc. For continuous use, if desired.

FEATURES — Offer controlled, safe heat, with no hot or cold spots. Uniform coverage of even heat at low concentration. Built for long service.

DESCRIPTION — Available in a variety of styles and sizes. Illustration shows pint and 2-quart units. Cast aluminum housing with spun steel inner pots. Insulated resistance wire in numerous circuits is cemented uni-



1 pt. and 2 qt. oil bath pots

formly over sidewalls and bottom, on outside of inner pot.

Wiring permits low wattage heating units which operate at black heat. Pots shown in illustration have no type of heat control, but were furnished to user's specified wattage, the user supplying appropriate temperature control. However, similar units are available with fixed or variable thermostat control. For fixed control, multiple-circuit thermostat is factory-set to maintain a single specified temperature. Setting can be readjusted by user in event of changing requirements. This thermostat furnishes temperature control with only plus or minus 1 or 2°F.

Variable dial thermostat does not furnish as close control, but is flexible and calibrated to cover the range specified. For example, 100 to 350°F., 300 to 550°F., etc. Rods shown in illustration are optional, and intended for holding pots in pipe stand. Available for either 110 or 220, AC or DC, with attachment cord.

SOURCE — Made by Sta-Warm Electric Company, Dept. CP, Ravenna, O. . . . or for more information check CP 4460 on handy form, pages 2 and 3.

MARCH, 1948

When it comes to DRYING

LINK-BELT
Engineers
are at
YOUR
Service

Link-Belt Engineers offer their specialized advice, based upon broad experience with many drying problems in the food and chemical industries. This advice, which implies no obligation, may result in more satisfactory drying operations for you.

Please give us the information below

1. MATERIAL

- A. To be dried: _____ Cooled: _____ Roasted: _____
B. Weight per cubic foot, wet _____
Weight per cubic foot, dry _____
C. Initial moisture _____ %: Final moisture _____ %
D. Specific Heat of Material _____
E. Maximum and minimum sizes of particles _____
(Screen analysis desirable)
F. Is material sticky? _____ Abrasive? _____ Corrosive? _____
G. Temperature of material as fed to cooler or dryer _____
Desired disch. temp. _____
H. Maximum temperature to which material may be heated without injury _____

2. CAPACITY

- A. Rate _____ Lbs. per hr. _____ Tons per hour: _____
Check whether feed _____ or Discharge _____
B. How many hours per day will dryer operate? _____
Days per week? _____
C. Is feed uniform? _____ Subject to surges? _____
Explain _____

3. TYPE OF HEAT

- A. Steam _____ Pressure _____
B. Oil _____ Pressure _____
(B.T.U. per gal.) _____ Gravity _____
C. Gas _____ Pressure _____
(B.T.U. per cu ft.) _____ Kind _____
D. Bituminous coal _____ Calorific Value (B.T.U. per lb.) _____

NAME _____

ADDRESS _____

MAY WE SEND

YOU LINK-BELT DRYER BOOKS Nos. 1911-A & 2209?

LINK-BELT COMPANY

Chicago 9, Indianapolis 6,
Philadelphia 40, Atlanta, Dallas 1,
Minneapolis 5, San Francisco 24,
Los Angeles 33, Seattle 4, Toronto 8.
Offices in Principal Cities.



When inquiring check CP 4461 on handy form, pgs. 2-3



EXACT WEIGHT Sacking Scale packaging salt in the Pioneer Salt Company, Philadelphia, Penna.

For Fast, Accurate Chemical Packaging . .

If you sack free flowing chemicals in weights ranging from 25 to 150 lbs. EXACT WEIGHT Sacking Scales will do your work faster, more accurately. And too you will sack more tons per hour, per man all day long. The equipment handles either cotton, burlap or paper bags in any size desired. Operation is simple. Bags are filled, weighed, and checked in one operation with no extra trimming or added checkweighing. It all adds up to the lowest cost packaging ever attained in volume production. Write for full details including data on EXACT WEIGHT no-waste valve and elliptical bagholder for your size bags.

**Sales
&
Service
from
Coast
to
Coast**



EXACT WEIGHT Sacking Scale Model No. 2225—Features pedestal mounting for more room for bag handling; revolving dial visible from any working angle; dust exclusion dashpot for trouble-free operation; new lock-jaw bagholder—Capacity to 150 lbs.

INDUSTRIAL PRECISION

Exact Weight Scales

THE EXACT WEIGHT SCALE COMPANY

31 W. Fifth Ave., Columbus 12, Ohio
Dept. E, 783 Yonge St., Toronto 5, Canada

When inquiring check CP 4462 on handy form, pgs. 2-3

Page 72

Processing Equipment

Metered, 10 gpm Pump Dispenses Liquids to 10,000 SSU Viscosity

Registers to 8 gals., with 9,999-gal. totalizer; non-corrosive construction



Meter-equipped rotary hand pump

to zero from any position. Working parts are of non-corrosive materials.

DESCRIPTION — Meter-equipped unit, illustrated, registers to 8 gals., and is equipped with 9,999-gal. totalizer. Disc-type meter has 4-1/2" dial, 3/4" IP connections. Pump includes 40" suction pipe with bung attachment, 8' oil-resistant discharge hose and aluminum nozzle.

Capacity, 10 gpm. Hardwood handle crank. Aluminum rotor, graphite carbon vanes, cadmium plated packing nut and stainless steel springs. Bulletin 3001 contains complete specifications for all models.

SOURCE — A product of Bowser, Inc., Dept. CP, Fort Wayne, Ind. . . . or for more information check CP 4463 on handy form, pages 2 and 3.

USES — Meter-equipped rotary hand pump for fueling or dispensing liquids up to 10,000 SSU viscosity. Handles liquids varying from alcohol to No. 50 Penn Base oil at 51° F. For use on machinery requiring hand pumps as an integral function.

Other models are available for installation in piping systems, as barrel pumps, or for skid tank mounting. For gasoline, paint, fuel or lube oils, etc.

FEATURES — Meter-pointer can be set back

Controls Flow of Water, Gas, Oil, Air Despite Variable Pressures

Versatile "Mesurflo" device also maintains arc or distance of liquid stream or jet

USES — Designed for individual flow-control applications involving water, oil, gas or air. For delivering a specific flow over a wide range of variable pressure conditions. For controlling a jet or stream of liquid maintaining predetermined arc or distance of stream despite variable pressure extremes.

FEATURES — Subdues excessive pressure hammer. Reduces operating costs, eliminating surplus hot water, oil, gas or air. Automatically absorbs variable pressure flows and measures predetermined amount of flow.

Eliminates complicated gears and motors, permitting simple timing mechanism for measured quantities. Adaptable to a wide variety of installations.

DESCRIPTION — "Mesurflo" control is equipped with copper tube body, bronze couplings, monel metal strain-

er, non-corrosive orifice plate, asbestos neoprene gaskets and molded rubber diaphragm. Built to individual flow requirements, piping specifications and equipment. Folder 113 contains additional data.

SOURCE — A product of Hays Manufacturing Company, Dept. CP, Erie, Pa. . . . or for more information check CP 4464 on handy form, pages 2 and 3.

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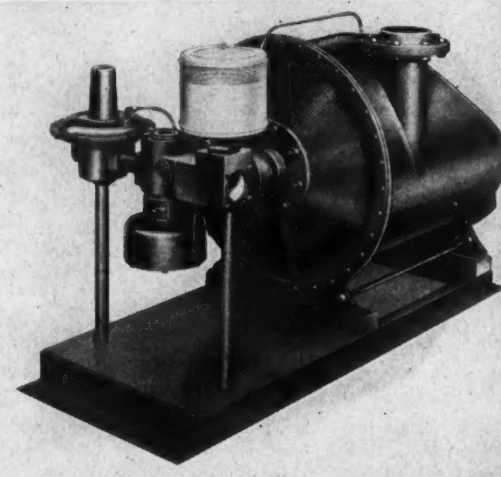
Gas-air Mixer Permits Visible Operation

Pre-mixes commercial gases with air in any desired proportion or quantity

USES — Gas-air mixer for pre-mixing any commercial gas—natural, manufactured or liquid petroleum—with air in any desired proportion or quantity within its capacities. Also for delivering such mixtures to burners under constant pressure.

Applications for this unit are said to include automatic brazing and soldering operations, flame hardening, atmosphere units requiring accurately controlled atmosphere gas, and furnaces utilizing a high rate of heat input.

FEATURES — Permits visible operation. Assures accurately controlled combustion mixtures for all types of heating processes, independent of fluctuations in gas pressure or changes in output demand. Other features: Extremely close temperature control. High heat input.



Gas-air mixer with visible operation

Practically unlimited turn-down range. High burner pressure. Makes possible any desired flame characteristic.

DESCRIPTION — Operator can check unit's performance by observing operation of piston and valve through an inspection window in the air inlet. Present models provide mixture capacities ranging from 3000 to 18,000 cu. ft. per hr., and larger sizes are planned. Discharge pressures vary from 28 to 32 ozs., with uniform 3500 rpm for all 5 models.

Control mechanism of mixture ratio is located on air inlet side, obviating the necessity for a stuffing box, and operation of mixture ratio is independent of changes in output demand or gas pressure fluctuations. A

CHEMICAL PROCESSING Preview

Permanent Magnetic Power TO STOP TRAMP IRON



**NEW—
Dings Alnico
Perma-Plate Magnet**

Here's the low cost, positive, modern way to get iron out of your product, protect machinery, prevent fire or explosion due to iron sparks. Powerful . . . lightweight . . . inexpensive . . . easy to install . . . non-electric . . . no operating cost . . . advanced design . . . *magnetic performance guaranteed for life!* For installation in chutes or above belts. Standard widths 4" to 72". WRITE FOR BULLETIN NOW.

DINGS MAGNETIC SEPARATOR CO.
4731 W. McGeogh Ave., Milwaukee 14, Wis.
*A Complete Line of Permanent
and Electromagnetic Separators*
DINGS Since 1899

When inquiring check CP 4465 on handy form, pgs. 2-3



SINGLE BAYONET TANTALUM HEATER

For horizontal or vertical operation, through side or bottom openings in vessel. With heater entirely submerged, total heater area is an active heating surface.

Consult Fansteel on the savings with tantalum **BAYONET HEATERS**

*Combining chemical properties of
glass with physical properties of steel*

Use of acid-proof Tantalum Bayonet Heaters is steadily increasing. In severe plant service, years beyond estimates at installation, they are demonstrating not only their immunity to corrosion, but important cost savings.

You are cordially invited to consult Fansteel Tantalum engineers for specific information on the possibilities of Tantalum Bayonet Heaters in your own plant. This service does not imply any obligation whatever. Fansteel Metallurgical Corporation, North Chicago, Illinois.

USE TANTALUM WITH ECONOMY

For most acid solutions and corrosive gases or vapors, except HF, alkalis, or substances containing free SO₃



When inquiring check CP 4466 on handy form, pgs. 2-3

MARCH, 1948

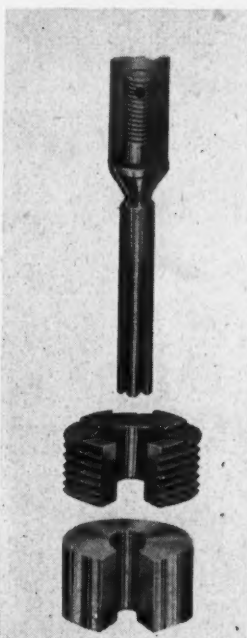
Processing Equipment

more detailed description of this equipment is contained in Bulletin 825.

SOURCE — Manufactured by Gas Appliance Service, Inc., Dept. CP, 1211 Webster Ave., Chicago 14, Ill. . . . or for more information check CP 4467 on handy form, pages 2 and 3.

Control Valve Handles cc Flows with 1000-lb. Pressure Drops

15 interchangeable sizes have related capacities of 2385 to 3.78 cc's of water per min.



Control valve with
spline plug

USES — Control valve with spline plug for handling flows in cc's with pressure drops in thousands of pounds. For example, manufacturer reports a No. 15 spline plug at 1/10" valve lift will pass a flow of 9 cc of water per min. at 1000 lbs. pressure drop.

FEATURES — When new operating conditions require a different capacity valve, it is necessary only to back out the threaded retainer and replace plug and seat with one of proper trim size.

DESCRIPTION — Basic element is a solid stellite valve plug, honed to fit in solid stellite seat. Clearances between plug and seat cannot be measured by ordinary methods, yet galling does not occur due to type of metal used.

Physically, flow control section of spline plug is 1/4" OD, 1 5/8" long, a selective lapped fit in a 3/8" deep seat. Seat depth assures streamline or viscous flow just as plug leaves seat. Flow control in the 1" of valve travel is governed by shape of slots or grooves milled into plug surface, whence comes name, "spline plug." Available in any body size of 1/2, 3/4 or 1".

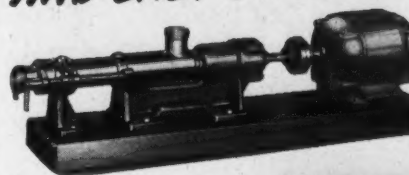
Actual valve sizes are below 3/16" normal rating. There are 15 interchangeable valve plugs for seats numbered 1 through 15, corresponding to a valve flow coefficient (Cv) of 0.63 to 0.001, for capacities varying respectively from 2385 to 3.78 cc's of water per min. in full open position. Flow coefficient (Cv) is defined as capacity of valve in gpm of water at 1 lb. pressure drop. Flow characteristics of No's. 1 through 5 are equal percentage, No's. 6 to 15 linear. These valves can be ground in for tight shut-off.

All valves have rangeability of 50:1 or greater. Seat is lapped, piloted fit in valve body, held in place by threaded retainer which clamps it in valve body.

SOURCE — Manufactured by Hammel-Dahl Company, Dept. CP, 243 Richmond St., Providence 3, R. I. . . . or for more information check CP 4468 on handy form, pages 2 and 3.

CLEAN

AND EASY TO KEEP CLEAN



Direct-Connected
Food-Type Moyno.
Other types for
every service.

**R & M
MOYNO
PROGRESSING-CAVITY
PUMP**



This food-type Moyno at Bio-Process Company, Inc., LaGrange, Ill., pumps bile for making Dehydrocholic acid. Belt-driven by an oversize motor (one they had on hand), it pulls the bile through 75 feet of pipe, forces it through a filter, then up 20 feet, and horizontally 20 feet to mixing retorts.

Where sanitation is vital, more and more modern processors are using Moyno "progressing-cavity" pumps—the pumps that can be cleaned completely in just a few minutes.

At the Bio-Process Company, Moynos handle every type of liquid and solid-liquid transfer. Bio-Process is one of the few sources in this country for pharmaceutical Dehydrocholic acid—formerly obtained in quantity from Germany.

WORLD-FAMOUS FOR VERSATILITY

Moynos will pump virtually anything that can be pushed through a pipe. They have no pistons, valves, or high-speed impellers—and only one moving part, a single helical rotor. Complete isolation of bearings prevents contamination.

"Progressing-cavity" pumping has solved hundreds of tough problems. Let it help you, too. Write today for free Book No. C22P, and the name of your distributor.



ROBBINS & MYERS, INC.

• MOYNO PUMP DIVISION •

SPRINGFIELD 99, OHIO • BRANTFORD, ONTARIO

MOTORS • HOISTS • CRANES • FANS • FOUNDED 1970

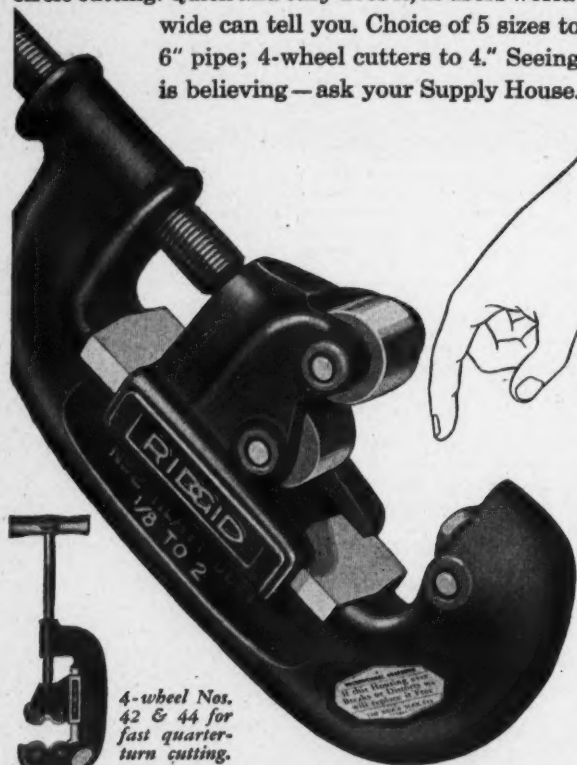
When inquiring check CP 4469 on handy form, pgs. 2-3

Page 73

YOUR Pipe Cutting MADE EASIER

RIGID Cutter rolls right thru any pipe—it's now efficiency-balanced

● You find it surprising how much the new balanced malleable frame of this **RIGID** takes the work out of pipe cutting, helped by its special tool-steel cutter wheel, factory tested to assure perfect circle cutting. Quick and easy does it, as users worldwide can tell you. Choice of 5 sizes to 6" pipe; 4-wheel cutters to 4." Seeing is believing—ask your Supply House.



RIGID
WORK-SAVER PIPE TOOLS

THE RIDGE TOOL COMPANY • ELYRIA, OHIO

When inquiring check CP 4470 on handy form, pgs. 2-3

Page 74

Processing Equipment

All-Quartz-Fiber Mantle Used at Fabric Temperatures to 650° C.

*All flexible portions, including insulation,
made of quartz*



High temperature, wattage mantle

USES — Indicated wide applications are in pharmaceutical operations requiring rapid distillation of water from glass vessels. Also applicable to pilot cracking chambers and any type of distillation from glass where time is an important factor.

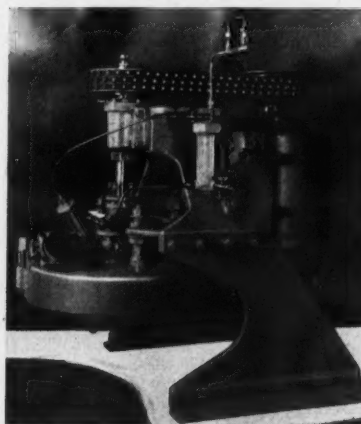
FEATURES — All quartz construction, making possible operation at fabric temperatures up to 650° C.

DESCRIPTION — This new all-quartz fiber mantle is latest addition to manufacturer's complete line of laboratory heating mantles. It is constructed with the same protective aluminum housing found in previous units, but all flexible portions, including the insulation, are made of quartz.

SOURCE — The Glascol Apparatus Co., Dept. CP, 1700 South 7th St., Terre Haute, Ind. . . or for more information check CP 4471 on the handy form, pages 2 and 3.

Acid-Resistant Glass-Lined Pump Serves in Range Beyond Alloys

*Unit uses unique design to maintain gas
between liquid and stuffing box*



Glass lined pump handles materials
that would adhere to metals

Provides the mechanical strength of glass fused to high quality iron. Savings are afforded when glass is substituted for expensive alloys. Finely engineered stuffing box design incorporates unique provision for maintaining a gas barrier between the liquid pumped and the stuffing box. This feature makes the most severe chemical conditions practical, either with a stuffing box

USES — For wide application in handling materials and processing, but particularly in service where chemical resistance is required beyond the range of alloys and where temperature and pressure conditions are outside the range of other linings. Used to advantage with materials that stick to metals but not to glass.

FEATURES —

CLEAN without soap



No Film
No Streaks..

You may like soapy cleansers—and think they're good—until you try the new wetting agent, Alconox.

**This amazing new cleanser
Lifts off hard-to-clean dirt . . . Fast**

No matter what you want to clean, or how dirty it may be, Alconox will make it sparkle. Yet it is gentle on the hands.

**Soapless but suds freely
ALCONOX cleans almost everything**

So you needn't stock different cleansers for different jobs. One spoonful makes a gallon.

Just Wash and Rinse — It's Sparkling Clean
Wiping practically unnecessary. Leading hospitals, laboratories, food and industrial plants use it—like it. So will you. Try it on your toughest job.

3-lb. box \$1.25; 12 boxes \$13.50; 50-lb. bag, 32c lb. Prices for larger bulk on request. Order some from your laboratory supply dealer—or write to us for FREE SAMPLE and name of your nearest dealer.

ALCONOX Inc.
227 Greene St.
New York 12, N.Y.

ALCONOX *cleans better
cleans quicker*

When inquiring check CP 4472 on handy form, pgs. 2-3



SPECIALIZED ENGINEERING ASSISTANCE

Alberene Engineers can save you valuable time—possibly money as well by reason of their comprehensive knowledge of the design, re-design, fabrication and installation of laboratory equipment.

Over 50 years of service in the finest laboratories has proved Alberene Stone's exceptional durability—performance—and year-after-year economy. Write for Laboratory Catalog. Alberene Stone Corporation of Virginia, 419 Fourth Ave., New York 16, N. Y. Sales Offices in Principal Cities. Quarries at Schuyler, Virginia.

**ALBERENE STONE
LABORATORY EQUIPMENT**

When inquiring check CP 4473 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

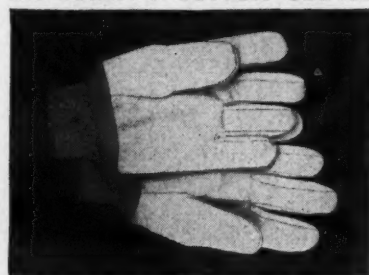
COOPER**(CERTIFIED)****STAINLESS STEEL
VALVES****Immediate Delivery
from STOCK**

COOPER can make immediate delivery from stock on Standard Type Stainless Steel Valves. These include: GATE • GLOBE • Y • NEEDLE • CHECK and QUICK-OPENING . . . also on Stainless Steel Pipe Fittings and Accessories.



Specialists in Corrosion Resisting Stainless Steel
THE COOPER ALLOY FOUNDRY CO.
HILLSIDE, NEW JERSEY

When inquiring check CP 4474 on handy form, pgs. 2-3

NEW DEVELOPMENT**Saves
40%****ON SURETY'S COTTON GLOVES****ON
WORK
GLOVE
COSTS**

**Industrial tests prove FIBRE-BONDED
gloves outwear ordinary gloves 5 to 1 on
tough jobs . . . 8 to 1 on average jobs!**

Special Sureseal treatment of glove palm strengthens FIBRES, SEAMS AND STITCHING . . . produces amazing resistance to abrasion, snagging and wear. Sureseal impregnation will not crack, chip or peel—gives long-lasting gripping surface. Available in knit-wrist, band-top and gauntlet types. Also quotations on treating your cotton, leather or asbestos gloves. Details on request.

THE
SURETY
RUBBER CO.

CARROLLTON, OHIO

When inquiring check CP 4475 on handy form, pgs. 2-3

MARCH, 1948

Processing Equipment

where packings can have long life or with modern rotary seals as protection against corrosive liquids by automatically maintained gas barrier. Space between outboard bearing and pump housing permits stuffing box to be lifted off pumpshaft sleeve for inspection or servicing.

DESCRIPTION — This glass-lined pump has been designed for vertical use only. This design has been adopted because of the peculiar limitations of practical chemical glass-lined construction which does not permit the use of standard methods of securing clearances. To avoid beyond doubt any chance of injury to pump lining, impeller clearances, even though larger than ordinarily used, must be set with great care and must be positively checked before starting the pump. A 1/6 inch brass wire loop gauge is supplied which can check impeller clearance both above and below the blades through the 3 inch bottom outlet without disassembly.

One of various distinctive things about the glass lined pump is the assembly of the impeller on the pump shaft. These impellers are internally balanced by weights caulked into place inside the hub of the impeller, and because all parts of the impeller must be glass coated, this impeller is drawn onto the pump shaft by a pull-in rod extending all the way through the pump shaft to the top. The seal between the impeller and the pump shaft sleeve is made with a suitable locked-in gasket.

The glass-lined impeller is of the semi-open type and the central hub diameter has a relatively close clearance at its outside diameter with the impeller housing so that between this point and the stuffing box there is a space which can be kept filled with gas and to which a 1 inch equalizing port is connected.

SOURCE — This pump is the product of the Pfadler Co., Dept. CP, Rochester 4, N. Y. . . . or for more information check CP 4476 on the handy form, pages 2 and 3.

**"Eye Savers" Fit Over Widest
Safety, Prescription Glasses**

*Replaceable plastic lenses exceed federal
specifications for impact-resistance*

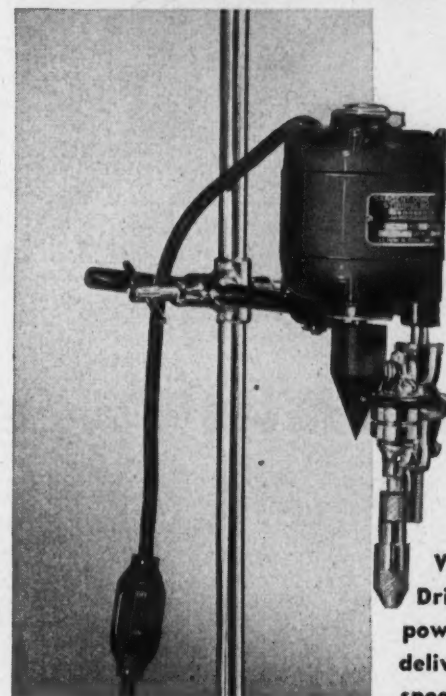
**"Eye Saver" goggles**

long use. High impact-resistance eliminates risk of broken glass, manufacturer reports.

DESCRIPTION — Sturdy molded frame with Shatter-proof Impax plastic lenses exceeding federal specifications for impact-resisting goggles. Extra-large bridge-size provides universal fit.

Either frames or lenses are quickly replaceable. No. 30 "Eye Savers."

SOURCE — Made by Watchemoket Optical Company, Dept. CP, Providence 3, R. I. or for more information check CP 4477 on handy form, pages 2 and 3.

**SARGENT CONE DRIVE
STIRRING MOTOR**

**Smooth,
Vibrationless
Drive with full
power of motor
delivered at all
speeds**

Throughout the entire speed range of 75 to 1300 r.p.m., the Sargent Cone Drive delivers *full* motor power, is vibrationless and silent, and assures constancy of any selected speed. It is, therefore, as efficient for such applications as the rotation of electrodes and calorimeter paddles at speeds of about 200 r.p.m. or less, as it is for general stirring operations at higher speeds. Fine adjustment of speed is made by means of an adjusting nut which changes the effective diameter of the cone in contact with the friction ring. Because the motor is a brushless, induction type not containing centrifugal switches, it is recommended as safe for use in the presence of inflammable vapor. The simple right angle clamp permits rapid adjustment of the motor to any desired position in horizontal and vertical planes.

S-76445 Sargent Cone Drive Stirring Motor. (Patent No. 1,973,576.) Complete with cross support rod, right angle clamp, connecting cord and plug, but without support stand. For operation from 115 volt A.C. 60 cycle circuits. **\$40.00**
S-76455 Ditto. But for 115 volt D.C. circuits. **46.00**
S-76465 Ditto. But for 230 volt A.C. 60 cycle circuits **42.00**
S-76475 Ditto. But for 230 volt D.C. circuits. **48.00**
S-76480 Anode Chuck and Cathode Collet. **1.50**
S-79225 Support only for Sargent Cone Drive Stirring Motor (illustrated above). Designed with considerable mass to minimize support vibration. The heavy U shaped base accommodates vessels up to six inches in diameter and larger vessels can be placed on top of the base which has a flat surface. Supplied with a 3/4" rod, 30 inches long and adjusting screws to insure a solid four point support on any surface. Each. **\$10.00**

SARGENT

SCIENTIFIC LABORATORY EQUIPMENT AND CHEMICALS
E. H. SARGENT & COMPANY, 155-165 EAST SUPERIOR ST., CHICAGO 11, ILL.
MICHIGAN DIVISION 1959 EAST JEFFERSON - DETROIT, MICHIGAN

When inquiring check CP 4478 on handy form, pgs. 2-3



Cutting the cost of drying
out chemical salt crystals was the
problem of this manufacturer who
was already using centrifuging
plus drying ovens . . .

AGAIN . . . the answer is **HIGH SPEED CENTRIFUGING**

This case study is of a manufacturer who had been reaping large savings in time, space and costs for many years by employing centrifuging in his chemical salt-drying processes. Yet he multiplied his savings with new AT&M equipment! Compare *your* costs . . . regardless of your present methods . . . with possible savings that may be brought to light by free confidential AT&M engineering survey. No obligation involved. The coupon will bring you further information. **AMERICAN TOOL & MACHINE COMPANY, 1425 Hyde Park Avenue, Boston 36, Mass. 30D Church Street, New York 7, N. Y.**

AN AT&M PLUS

This improved, external-contracting, heat-free brake design slices braking time to half that formerly required. AT&M Centrifugals can be brought to a dead stop from full speed within 60 seconds! Result: less time required between cycles . . . more cycles per shift.

SAVE TIME, SPACE AND COSTS WITH

A.T. and M. CENTRIFUGING

AMERICAN TOOL & MACHINE COMPANY
1425 Hyde Park Ave., Boston 36, Mass.

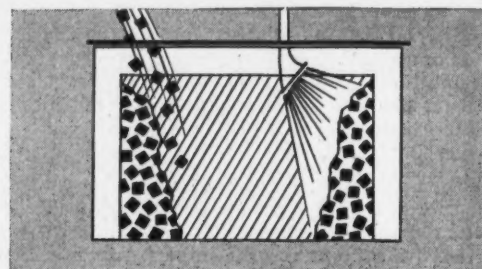
Please send information on centrifuging applied to the following processes:
☐ Extraction ☐ Filtration ☐ Dehydration ☐ Coating ☐ Precipitation
☐ Sedimentation ☐ Impregnation

Write here any other process . . .

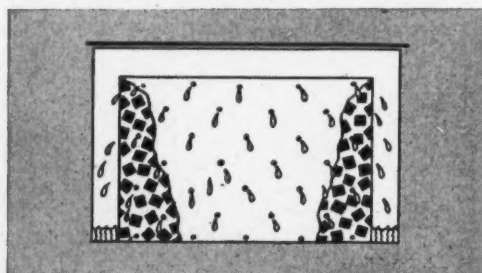
Name . . .

Company . . .

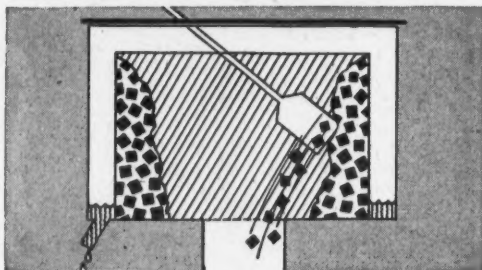
Address . . .



A new, high speed AT&M centrifuge was installed in place of older, slower model. Salt crystals were loaded into perforate basket and sprayed.



Higher basket speed resulted in eliminating all but 1% of the crystals' moisture content. Best older models could do was dry to 6% moisture content. Remainder was removed by relatively long oven baking process.

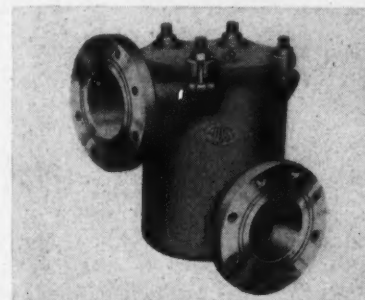


Dry salt crystals plowed out at bottom of basket. Oven drying was cut to bare minimum required to remove remaining 1%. Over-all savings were calculated at \$30,000 per year.

Processing Equipment

Pipe-line Strainer Drains - Thoroughly with Line

Offset design permits use as right-angle connection;
1½ to 12" sizes are 125-300 psi



Offset pipe-line strainer

USES — Offset pipe-line strainers for complete drainage of strainer as line, itself, is drained. For working pressures from 125 to 300 lbs.

FEATURES — Offset design, with inlet and outlet at right angles, permits installation to

form right-angle connection in piping system, if desired. **DESCRIPTION** — In sizes 1½ to 12", flanged, screwed or welded connections. Basket and basket-chamber made to specific length, depending on amount of entrainment in stream. Removable cover permits lifting out perforated strainer basket. Clean-cut plug permits steam blow-down cleaning when practical. Made in cast bronze, steel, semi-steel, iron, or alloyed metals for corrosion-resistance.

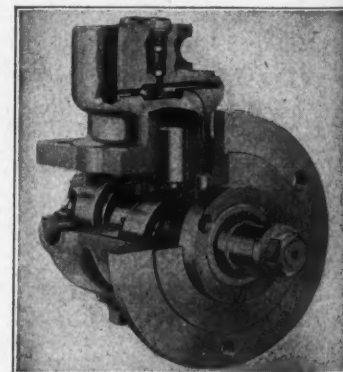
SOURCE — Development of J. A. Zurn Mfg. Company, Dept. CP, Erie, Pa. . . . or for more information check CP 4480 on handy form, pages 2 and 3.

★

High-pressure Hydraulic Pump Is Compact, General Purpose

Uses ½ to 5 hp; has practical pressure range
of 100 to 4000 psi

USES — High-pressure general purpose hydraulic pump for use with all types of equipment involving hydraulic actuation. For mounting at any angle with fan belt or crankshaft drive by gasoline or diesel-powered vehicles. Also for electric-motor drive. For serving any type of oil-hydraulic ram.

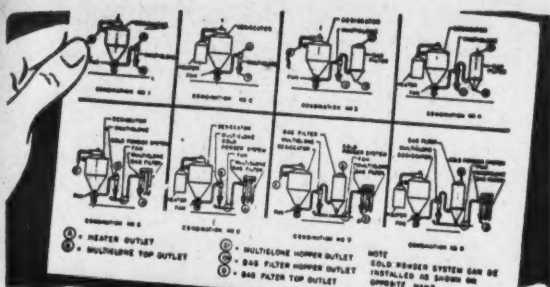


High-pressure hydraulic pump

FEATURES — Simplicity and compact size permit installation without alteration, in most cases. Other benefits resulting from these characteristics include smaller oil lines, compact valves and small-diameter rams. Facilitates compact design of new equipment using hydraulic pumps. Unusual mounting provisions are unnecessary.

DESCRIPTION — Power-driven twin-piston reciprocating type. Uses ½ to 5 hp power sources. Practical

When inquiring check CP 4479 on handy form, pgs. 2-3



This helpful TURBULAIRE Chart may be the key to YOUR SPRAY DRYER PROBLEM

Send for your copy today!

The Turbulaire "Type N" Spray Dryer—an advanced type of dryer complete with collector for recovering the dried material, a heater and other optional equipment all combined into one compact unit—is an entirely new concept in spray drying equipment. It is ideal for research and pilot plant investigations into the "dryability" of various products, as well as for small scale production drying.

Whatever your requirement—spray drying waste or by-products in your plant—or the development of production techniques for new products—we urge you to investigate the unusual possibilities of the Turbulaire Type N.

Send for application chart which shows the unusual versatility of the TURBULAIRE Type N. With it we will also send an engineering booklet giving you many helpful facts about the Type N. Write today!



**WESTERN
Precipitation
CORPORATION**

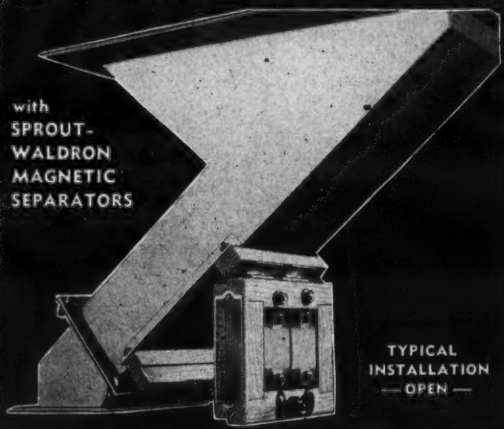
ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF WASTED MATERIALS FROM GASES & LIQUIDS

Main Office: 1025 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 LA SALLE ST. BLDG., 1 N. LA SALLE ST., CHICAGO 2 • HOBART BUILDING, SAN FRANCISCO 4, CALIFORNIA
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

When inquiring check CP 4481 on handy form, pgs. 2-3

LOW COST PROTECTION

with
**SPROUT-
WALDRON
MAGNETIC
SEPARATORS**



TYPICAL
INSTALLATION
— OPEN —

Against

COSTLY BREAKDOWNS due to tramp iron in grains, fertilizer, plastics, etc., during milling process.

FIRES, EXPLOSIONS caused by sparks resulting from tramp iron coming into contact with cutters, grinders, etc.

LAW SUITS arising from casualties to live stock which have been fed grain from which tramp iron has not been removed.

SPROUT-WALDRON & COMPANY
Manufacturing Engineers
MUNCY PENNSYLVANIA

When inquiring check CP 4482 on handy form, pgs. 2-3

MARCH, 1948

Processing Equipment

pressure range: 100 to 4000 psi. Over-all dimensions, including shaft: $5\frac{3}{4} \times 7\frac{5}{8} \times 7\frac{3}{4}$ ". General operating speeds: 600 to 1200 rpm. Capacity at 900 rpm: 1.375 gals. per min. Weight: 18 lbs. 4 ozs. A safety pressure adjustment valve, factory-set, adapts pump to type of service anticipated. Bulletin 1-P presents specifications performance data, constructional diagrams, etc.

SOURCE — P-104 hydraulic pump is a product of Blackhawk Manufacturing Company, Dept. CP, Milwaukee 1, Wis. . . . or for more information check CP 4483 on handy form, pages 2 and 3.

*

High Current Resistors Defy Mechanical Shock, Vibration

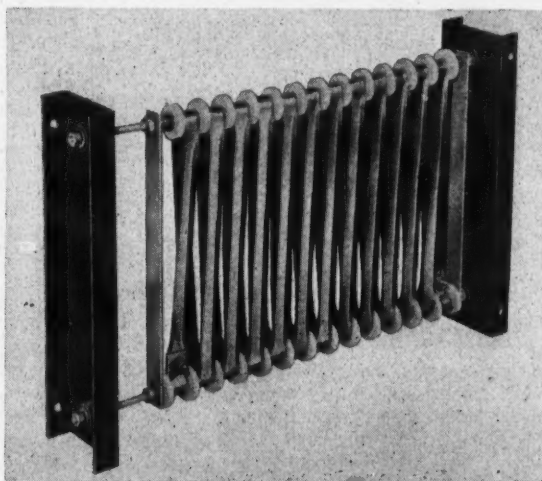
Light-weight units have continuous current capacities of 20 to 110 amperes

USES — "Loopohm" resistors for continuous-duty, high current applications with prevailing mechanical shock and vibration. For use on crane hoists, welding equipment, portable load banks, controller assemblies, etc.

For single or multi-unit mounting.

FEATURES — Light-weight; excellent radiating qualities; resistant to shock and vibration; high current capacity.

DESCRIPTION — Available with continuous current capacities from 20 to 110 amperes and with wide range of resistance values. Unit consists of channeled, non-corrosive alloy resistance ribbon of uniform cross sec-



"Loopohm" resistor

tion formed in series of loops supported between 2 rods insulated with ceramic bushings and washers. Rods are securely bolted to pressed steel frames.

Each unit equipped with 2 end terminals for connection purposes. Where required, resistors can be furnished with tapered current capacities, fixed or adjustable clamp taps, end frames and expanded or sheet metal enclosures.

SOURCE — Developed by Ward Leonard Electric Company, Dept. CP, Mount Vernon, N. Y., or for more information check CP 4484 on handy form, pages 2 and 3.

VACUUM PUMPS



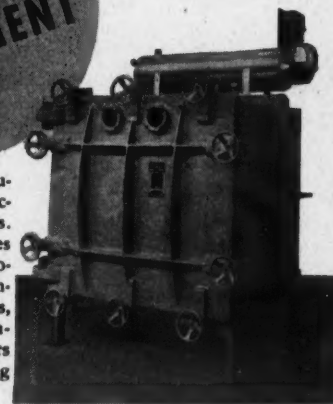
Stokes Microvac Pumps produce and maintain high vacuum within the low micron range, economically and dependably in hard, continuous service. They combine high volumetric efficiency and low power requirements; are simple in design, rugged in construction, fool-proof in operation. Six models, 10 to 500 cu. ft. displacement. Bulletin No. 463.

VACUUM GAGES



Stokes High Vacuum Gages (patented McLeod type) are always accurate, even in the presence of condensable vapors. Require no calibration, give rapid readings, are easy to operate—just tip and read. New "Vacorder" gage produces a continual, visible record of high vacuum conditions between 0 and 5000 microns. Bulletin No. 45-G.

VACUUM EQUIPMENT



Stokes engineers and manufactures complete high vacuum processing plants. Widely used are Stokes Vacuum Rotating and Rotary Dryers, Vacuum Impregnators, Vacuum Still, Pans, Evaporators, Condensers and Shelf Dryers (illustrated). Catalog No. 46-C.

F. J. STOKES MACHINE COMPANY
5974 Tabor Road Philadelphia 20, Pa.



SEE **STOKES** FOR HIGHER VACUUM
...TECHNIQUE AND EQUIPMENT

When inquiring check CP 4485 on handy form, pgs. 2-3

Protect Hands — Increase Efficiency

with **Redmont**

RUBBER COATED, FABRIC LINED GLOVES



No. 934—14" GAUNTLET



No. 919
KNIT WRIST



The Glove with HIGH RESISTANCE to Harmful Fluids— Premature Wear

Whether your workers' hands and arms are subjected to acid and caustic liquids, oil or grease, or many other kinds of harmful fluids or materials, you'll find REDMONTS the ideal glove to meet your requirements. These flexible, fabric-lined rubber-coated gloves are extremely tough and wear-resistant . . . won't snag or tear, and offer the kind of protection workers want when handling liquids, wet, dirty or harmful materials.

Look for the Fabric Lining No Rubber to Skin Contact

REDMONT'S wide, curved thumb span allows freer action . . . curved fingers provide more flexibility, comfort, better grip . . . red-banded cuff may be turned to prevent liquid running down when hands are raised. Edmont's exclusive rubber coating process assures tight, leak-proof seams. REDMONTS by Edmont are available in 10", 12" and 14" cuffs . . . also in knitted wrist style.

See your
SAFETY
EQUIPMENT
or
INDUSTRIAL
SUPPLIER



Fabric Lined
RUBBER COATED

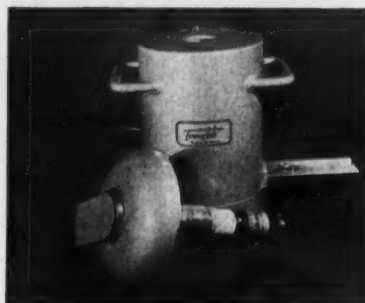
Edmont Mfg. Co., 501 Orange St., Coshocton, Ohio

When inquiring check CP 4486 on handy form, pgs. 2-3

Processing Equipment

Changer & Preamplifier Speeds Count of Radioactive Samples

Samples can be loaded from either side



Sample changer includes provision for mounting calibrated foil absorbers between the sample and the G-M tube

USES — This lead shielded manual sample changer and preamplifier permits faster, more accurate counting of a large number of radioactive samples.

FEATURES — Samples can be loaded from either side, minimizing lost time from sample loading.

DESCRIPTION — Model SC-9A consists of a two-inch lead shield of outside dimensions 11 3/8 inches high x 6 1/2 inches diameter to lower background count by a factor of three to five. The upper section of the shields holds a preamplifier circuit and a Tracerlab G-M tube. A stainless-steel sample holder is mounted in a slide in the lower portion of the lead shield.

The sample holder is designed to take 1 inch diameter samples on planchets, filter paper, and in ashing dishes, as well as standard radioactivity reference sources. Geometrical reproducibility within 0.1% is attained.

Ring and disc filter paper holders. Pyrex ashing dishes and radioactivity reference sources are available to fit this equipment. A sample changer of similar design without a preamplifier is available for scalers not designed for use with an amplifier.

SOURCE — Tracerlab, Inc., Dept. CP, 55 Oliver St., Boston, Mass. . . . or check CP 4487 on the handy form, pages 2 and 3.

Compact, Low Current Source Regulates 500-2000 Volt Power

*Handles Geiger-Muellers, electron-multipliers,
cathode-ray tubes, general lab work*



Compact power source

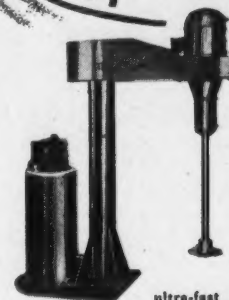
tubes. Also for general laboratory use.

DESCRIPTION — Delivers 500 microamps at 2000 volts and 1 ma. for voltages up to 1500. Regulation is maintained within 1% for plus-minus 10% line voltage and load variations up to maximum rated load. Drift

USES — Compact power supply for use where a 500 to 2000-volt source of regulated high voltage, at low current, is required.

Typical applications include Geiger-Mueller counters, electron-multiplier and cathode-ray

Dissolves or Disperses Up to 20 Times Faster



COWLES Ultra-Fast DISSOLVER

Years of research, practical experience and field test produced this ultra-fast Dissolver with the special-designed impeller that sets up laminar interface shear and produces particle scrubbing action.

The Cowles Dissolver is a soundly engineered machine of rugged stability, made from the finest materials, and equipped with nationally-known bearings, motors and rubber mountings. Every machine ever turned out is in active operation today.

Write for descriptive folder
... or ask for a technical
representative to call. No
obligation.

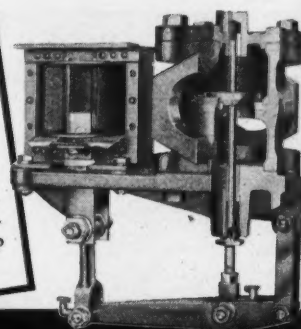
Designed to your special requirements
in dissolving or dispersing—
Liquids in liquids
Solids in liquids
Gases in liquids

The Cowles Company
INCORPORATED
CAYUGA, N. Y.
Associate: Alexander Fleck, Ltd., Ottawa, Ont.

When inquiring check CP 4488 on handy form, pgs. 2-3

Match it against your needs

- Provides full flow instantly
- Direct acting—no pilot valve
- For differential pressures up to 150 lbs.
- For temperatures up to 365° F.



NEW Automatic Valve

Brings new advances — Serves new uses

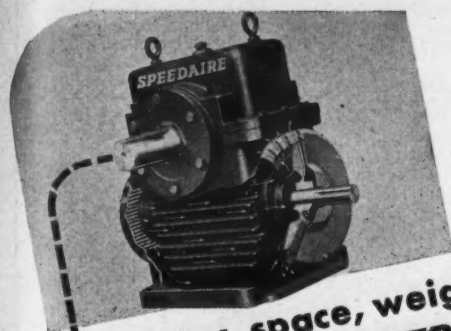
Now you can get a dependable, instant-opening automatic valve for practically all liquid level or flow control needs. This new Johnson Valve combines all the basic advantages of a direct-acting solenoid valve with the ability to operate under high differential pressures—up to 150 lbs. in some sizes. Its immediate response eliminates any time lag, or wiredrawing of valve or seat. The single seat construction dispenses with auxiliary pilot valves, minimizes danger of clogging. Can be used with hot and cold water, steam, oil, and other process liquids.

New bulletin shows wide scope of the
Johnson Solenoid Valve; ask for copy

The Johnson Corporation

826 WOOD ST., THREE RIVERS, MICH.

When inquiring check CP 4489 on handy form, pgs. 2-3



Save money, space, weight
with **SPEEDAIRE**

SPEEDAIRE is Cleveland's new fan-cooled, worm-gear speed reducer. Because it is fan-cooled, Speedaire will do more work—will deliver up to double the horsepower of standard worm units of equal frame size. For full description, rating tables, etc., send for Catalog 300. The Cleveland Worm & Gear Company, 3257 East 80th Street, Cleveland, Ohio.

CLEVELAND
Worm Gear
Speed Reducers

When inquiring check CP 4490 on handy form, pgs. 2-3



For
COMFORT AND SAFETY
DAVENPORT
Wood Sole
SHOES

Only
Davenport Wood
Sole Shoes Offer
All These Features

- 1 Uppers fastened to soles with continuous wire and coppered staples.
- 2 Vamp crimped to assure perfect fit.
- 3 Rivets reinforcing all points where strain occurs.
- 4 Insoles are thick felt for added comfort.
- 5 Sole leather counters.

Davenport Wood Sole Shoes are especially designed for use where ordinary safety shoes do not afford enough protection. Wooden soles provide sure footing on damp, slippery floors and protection on hot, rough surfaces. Comfort is built in. Vamps and uppers are of pliable oiled grain leather. Counters of first grade sole leather. Soles are close-grained maple cut with correct rock for easy walking. Available with safety toe. Styles for both men and women. Also special line of shower sandals—ready to ship.

FREE! Complete catalog showing all styles of Davenport Wood Sole Shoes. Write today for your copy.



F. J. STAHLER SHOE CO.

2412 Boies Ave.

Davenport, Iowa

When inquiring check CP 4491 on handy form, pgs. 2-3

Processing Equipment

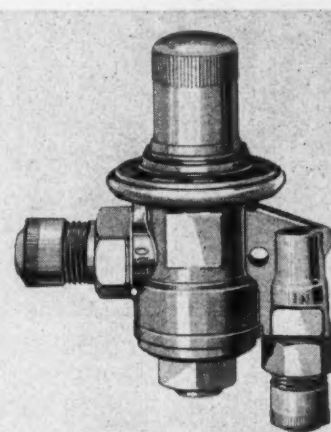
is within 0.1% at any voltage setting. Illuminated 3" meter indicates output voltage to accuracy of better than 5%.

Voltage step-up, rectification and filtering are at radio frequencies, making possible use of very small filter capacitors. This insures safety of those accidentally contacting the output. Complete unit, using 6 miniature tubes, is housed in compact oak cabinet 7½" high, 12" wide and 5¼" deep. Weight, 9½ lbs.

SOURCE — Made by Atomic Instrument Company, Dept. CP, 154 Charles St., Boston 14, Mass. . . . or for more information check CP 4492 on handy form, pages 2 and 3.

One Ton Expansion Valve Useful on Constant Loads

Range 15" vacuum to 35 pounds pressure



1 ton automatic expansion valve

USES — Expansion valve may be used for two temperature cabinets and low temperature testing cabinets, where the load remains fairly constant. May be used with Freon, Methyl Chloride and Sulphur Dioxide.

FEATURES — Ball type needle valve is self-adjusting, eliminates sliding friction. Floating construction means smooth, fast closing.

ing. Design of beryllium copper diaphragm increases sensitivity.

Rubber sealed metal cap is moisture-proof, prevents freeze-ups in head. Fine thread on adjusting knob assures close adjustment to proper pressure reading.

DESCRIPTION — Valve automatically adjusts its capacity to balance the machine capacity. When this balance has been established, the suction pressure will remain constant throughout the running period. Suction pressure at which this balance takes place is selected by turning the adjusting knob.

Correct valve adjustment and resulting operating suction pressure must always be selected when the fixture load is at a minimum. Only under these conditions is it possible to select the suction pressure which will result in the desired superheat at the suction line. When the valve setting is selected in this manner, the system will be protected from frost-back for higher load conditions.

When the machine shuts off at the end of the running cycle, the valve quickly closes off and prevents refrigerant flow into the evaporator during the off-cycle period.

SOURCE — This is a product of Automatic Products Company, Dept. CP, Milwaukee 10, Wis. . . . or for more information check CP 4493 on the handy form, pages 2 and 3.

Immediate delivery

...on this cost-cutting
automatic powder packager



NEW
TRIANGLE
MODEL U-1
AUGER PACKER

Because of increased production facilities on Model U-1 Auger Packers, we are now able to make deliveries from stock. There has been a heavy demand for this equipment because it is 15 to 25% faster than previous models, greatly reduces operator fatigue and is extremely accurate and easy to clean.

Here are the quick facts:

No pedals . . . Filling is automatic once container is placed in position . . . Packs into cans, bags, cartons, jars . . . Range 1 oz. to 5 lbs. . . . Production 20 to 30 packages per minute . . . Height 83" . . . Floor space 3' x 3'.

If you package powdered materials of any kind it will pay you to get in touch with us promptly in order to secure the benefits of this unusually efficient labor and money-saving unit as soon as possible. Write today.

TRIANGLE PACKAGE MACHINERY CO.

917 NO. SPAULDING AVENUE, CHICAGO

New York
Memphis

Pittsburgh
Jacksonville

San Francisco
Branch Factory at Los Angeles

Los Angeles

When inquiring check CP 4494 on handy form, pgs. 2-3

Farris Seal

New FARRIS Safety Relief Valve

with protecting **SEAL** for working parts

Designed particularly to withstand the severe corrosive conditions of the Petro-Chemical Industries, this valve offers full and exclusive protection against all acids and caustics normally handled on a commercial scale. Result: Long life — maximum trouble-free service — minimum maintenance — low operating cost.

Here's Why

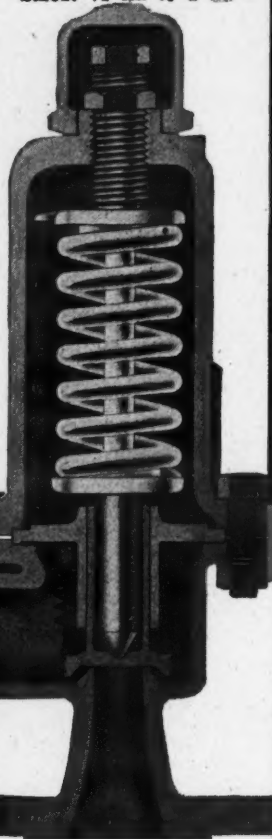
1. Haynes Stellite Co. "Hastelloy-C" body and disc is a hard, tough, corrosion resisting alloy.
2. The seal, rubber, "Neoprene" or any flexible metal — designed to withstand the action of specific acids or caustics, effectively isolates and protects all working parts.

Plus These Features

- Nozzle throat and high disc lift assure full certified capacity discharge.
- Precision alignment of the spring with the top-loaded free-acting disc guide assures positive action and tight seating.
- Long, low-stressed, protected loading spring maintains accurate set pressure.

Investigate the FarrisSeal savings.
Detailed data available on request
—without obligation.

Sizes: ½ in. to 2 in.



FARRIS ENGINEERING CORP.
406 Commercial Ave.
Palisades Park, N. J.

Farris

SAFETY and RELIEF VALVES

FARRIS keeps pace with advancing power and process engineering

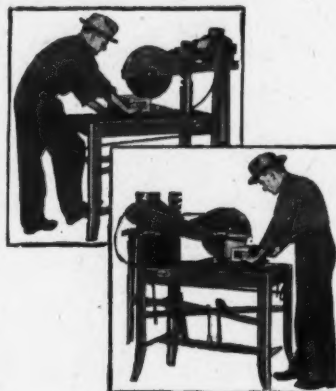
Processing Equipment

Saws Tile, Concrete; Cuts Wet or Dry

*Portable masonry saw operates
dustlessly in confined areas*

USES — Masonry saw for wet or dry cutting of brick, tile, concrete, quarry tile, fire brick. For industrial plants and furnace maintenance.

Also for use with manufacturer's new blade-types, including designs for both "dry" and "wet-cutting" of extremely hard materials, bonded diamond blades for tile, glass, marble, porcelain, etc.



Dustless masonry saw

FEATURES — Fully portable. High cutting speeds in spite of either dry or wet conditions are described by manufacturer as "the 100% answer to masonry cutting." Designed for reduced frictional heat, less current, longer blade life and blade sharpness. Cuts the most intricate shapes without stopping for adjustments.

DESCRIPTION — To eliminate dust when working in closely confined areas, turn on circulating system. Water is circulated from reservoir which is an integral part of frame. Circulation is by means of pump mounted on cutting head. A stabilizer control permits exact depth scoring.

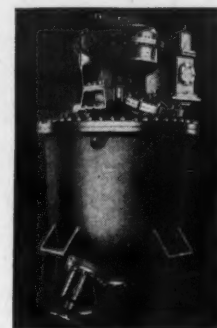
"Multiple cutting action" minimizes arc of contact and exhausts cut-away particles as quickly as they are cut, manufacturer reports. This permits blade to cut its own path.

Constructed with dual belt drive, snap-on blade cover, streamlined positions for instant one-man change, fully adjustable conveyor clamps. Both elevating and non-elevating types. Catalog No. 77 CP.

SOURCE — Model HD-48 masonry saw is manufactured by Clipper Manufacturing Company, Dept. CP,

DOPP KETTLES

Clean heating surfaces speed production in mixing operations.



Dopp Kettles, equipped with the Dopp Agitator that "cleans as it mixes", improve your product and cut production time.

BUFLOVAK EQUIPMENT

Division of Blaw-Knox Co.
1645 Fillmore Ave., Buffalo 11, N.Y.

When inquiring check CP 4496 on handy form, pgs. 2-3

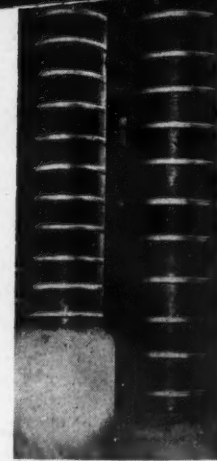
**Keep pipe insulation
on the job
with MONEL BANDS**

To cure the falling of insulation caused by band failure, the chemical process industry is turning to Monel®.

This stronger-than-steel INCO Nickel Alloy is rustproof, corrosion-resistant, able to withstand extreme temperatures from -300° F to +500° F.

Monel is not plated or coated. It is solid reliable metal throughout. Insulation bands made of Monel last indefinitely, even in moist, corrosive atmospheres. Lowered maintenance costs repay the initial investment many times over.

Investigate Monel bands today—and reduce tomorrow's repair bills. For further information, write INCO.



THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y. *Reg. U.S. Pat. Off



When inquiring check CP 4497 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

When inquiring check CP 4495 on handy form, pgs. 2-3

STAINLESS PROCESSING EQUIPMENT

Built to Your Own Specifications

We carry in stock for immediate fabrication an ample supply of high grade sheets of

STAINLESS STEEL MONEL METAL
ALUMINUM COPPER
NICKEL SILVER

Send us your inquiries for
VATS TANKS TROUGHS PANS
All-Metal and Rubber-Lined
SPECIAL STAMPINGS
COMPLETE ASSEMBLIES

THE EDWARDS MANUFACTURING CO.
743-783 Eggleston Ave. Cincinnati 2, O.

When inquiring check CP 4498 on handy form, pgs. 2-3

BETTER *air conditioning* for BETTER PROCESSING

JUST PRINTED

write for your copy

HUM CON

is more important
in your plant
than you may
realize

Kathabar *System of*
HUMIDITY CONTROL

Surface Combustion Corp., Toledo 1, Ohio

Kathabar *System of*
HUMIDITY CONTROL

Surface Combustion Corp., Toledo 1, Ohio

When inquiring check CP 4499 on handy form, pgs. 2-3

MARCH, 1948

Processing Equipment

2800 Warwick, Kansas City 8, Mo.
... or for more information check
CP 4500 on handy form, pages 2
and 3.

*

Bottle, Thermal Oilers Fit 3/4" Clearances

*Automatically lubricate solid,
wick, waste-packed bearings*



Unbreakable
bottle oiler

USES — Automatic thermal and bottle oilers to replace ordinary oil cups, especially where space between oil hole and machinery is limited.

For automatic lubrication of solid, wick or waste-packed bearings.

FEATURES — Unbreakable. Constantly visible oil supply. Easily removable for filling. Reduces oil waste. Eliminates costly down time for frequent hand-oiling. Avoids damage to walls and finished products. Removes fire hazards. Light-weight. Easily cleaned.

DESCRIPTION — Feed spout is arranged to side instead of dead center. This permits mounting where clearance is as little as 3/4".

Transparent, unbreakable plastic reservoir is large capacity for long service between fillings. Bottle removes for filling. Metal parts are bright cadmium-plated. No cork gaskets. Made in 1, 2 and 4-oz capacities. To install, remove old oil cup and screw in the 1/8" pipe thread adapter furnished with each oiler.

Illustration shows bottle oiler. The rod rides on the rotating shaft. Slightest vibration or vertical movement releases oil from plastic bottle. As bearing heats, thermal action forces oil upon bearing at greater rate of feed. When shaft is motionless, feed stops. Correct amount of oil is evenly distributed.

Thermal oiler is quite similar in appearance. On slight temperature rise, it discharges a few drops of oil. Bearing cools as it receives oil, and feeding stops automatically. Operation is repeated constantly and positively without attention.

SOURCE — Product of Trico Fuse Mfg. Company, Dept. CP, 2948 N. Fifth St., Milwaukee 12, Wis. ... or for more information check CP 4501 on handy form, pages 2 and 3.

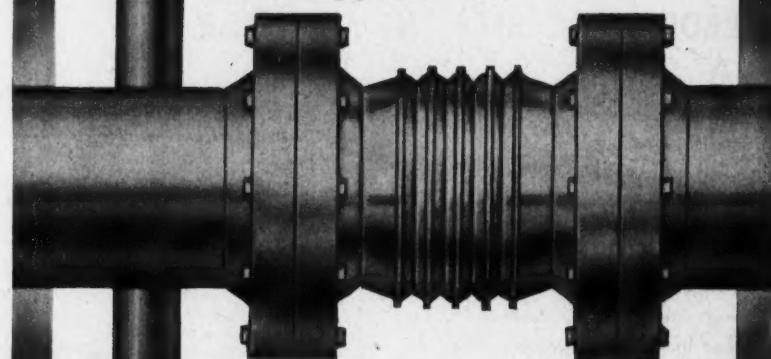
There is a MAGNILASTIC Expansion Joint for every piping need

Whether the pipes in your plant carry corrosive chemicals at ten pounds pressure or steam at a thousand—they are subject to tremendous stresses.

Whatever the size—or operating pressure—or temperature—your best bet to protect piping is packless, ringless MagniLastic Expansion Joints.

MagniLastic Joints will save on space ... installation time ... maintenance costs ... prolong the life of pipe, valves and fittings ... and then outlast the system itself.

There are six standard lines of MagniLastic Expansion Joints: 25# Copper, 55#, 150#, 400# and 1000# Stainless Steel, and Low-Pressure Large-Diameter Joints in Copper, Monel or Stainless to 72" pipe size.



Anchor, Offset, Jacket and Turbo Joints, plus special units made to order, take care of the extraordinary conditions.

Engineering assistance for individual replacements to complete piping layouts is available.

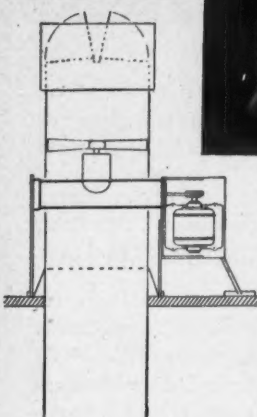
Catalog No. 245 on request

MAGNI LASTIC

DIVISION OF
COOK ELECTRIC COMPANY
Chicago 14, Illinois
Engineering & Sales Offices in Principal Cities

When inquiring check CP 4502 on handy form, pgs. 2-3

HERE'S HOW TO HANDLE FUMES



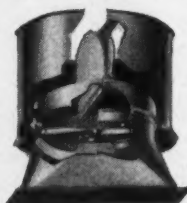
In this dye-house installation by Wolverine Equipment Company, Cambridge, Mass., two belt-driven Propellair fans, exhausting fumes through stainless steel stacks, do a far better job than did four older-type ventilators. Fan blades and belt housing are covered with corrosion-resistant coating. Sketch shows mounting of belt-driven drumless-type Propellair. Can be installed in any duct or pipe, without disassembly of either duct or fan.

PROPELLAIRS KEEP THE AIR CLEAR

AIR movement by Propellair is the quick, sure way to remove dust, toxic fumes, moisture, heat. Fair weather or foul, Propellairs clear the air and keep it clear. They improve working conditions—reduce labor turnover—increase efficiency.

USE THEM WHERE YOU NEED THEM

Propellair types, sizes, and mountings meet all air-moving needs. Fan blades and entrance rings utilize the airfoil principle for high-volume, low-cost air movement. Processing plants everywhere find Propellairs just what they need to help keep production figures high. You'll find them helpful, too. Write us for the name of your nearby Propellair specialist.



Propellair Verti-Stack Power Roof Ventilator for standard installations.

PROPELLAIR

DIVISION OF ROBBINS & MYERS, INC.

SPRINGFIELD · OHIO

When inquiring check CP 4503 on handy form, pgs. 2-3

Processing Equipment

All-Purpose Voltage Tester Is Versatile, Convenient

8-oz. unit tests AC, DC continuity, 110-550 volts AC, 110-600 DC, blown fuses, leaks to ground

USES — Voltage tester for all-around electrical testing. For example: testing continuity of circuits (AC or DC), 110 to 550 volts AC, 110 to 600 volts DC, blown fuses.

Also grounded side of line, grounded side of motor or appliance, excessive leakage to ground, frequency (25 or 60 cy.) and DC polarity.

FEATURES — Replaces test lamps for intermittent service. Versatile, safe and convenient to use.

DESCRIPTION — Indicates by means of solenoid indicator and a neon test lamp, each operating independently. 2' leads, securely anchored, are brought out through top of case, facilitating handling and reading. Streamlined plastic case. Easy-to-read scale, calibrated from 110 to 600 volts.

Overall length, 6". Leads are 2' long, test prod handles 4" long, with test prods 2" long. Includes carrying case, belt clip. Weight, 8 oz.

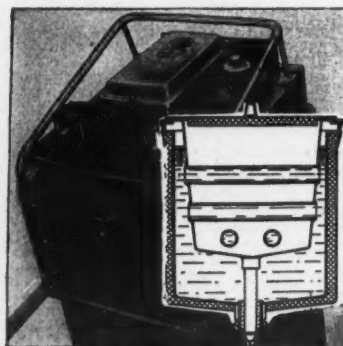
SOURCE — This tester is made by Ideal Industries, Inc., Dept. CP, 5073 Park Ave., Sycamore, Ill. . . or for more information check CP 4504 on handy form, pages 2 and 3.



Voltage tester

Eliminates Production Stoppages in Melting, Dispensing Work

Double-boiler type tank won't "coke" or char materials; uses new indirectly-heated valve

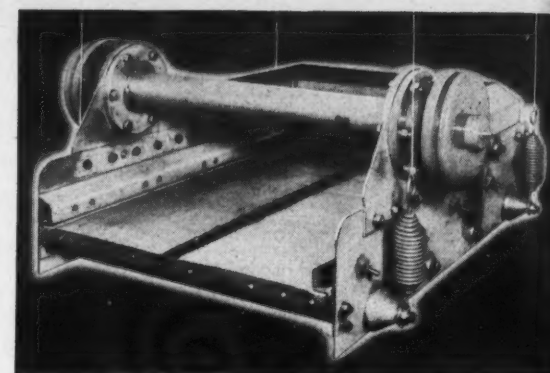


Dispensing tank and valve, both indirectly heated

production stoppages in connection with uses mentioned. **DESCRIPTION** — Both gas-fired and electrically heated units are built on double-boiler principle and feature a series of oil-carrying tubes running through length and width of inner vat. Thus, heat enters compound uniformly,

USES — Indirectly heated, thermostatically controlled melting and dispensing tanks for melting and dispensing battery and transformer compounds, critical waxes and similar materials.

FEATURES — Design makes it impossible to "coke" or char material being heated, and is reported to eliminate "more than 90%" of the causes for



ROBINS HYDREX SCREENS ...will do these three jobs!

- 1 Save the liquids from the solids!
- 2 Save the solids from the liquids!
- 3 Remove fines from coarser materials!

Handle hot or cold materials, acid or alkaline. Cloths are interchangeable—in sizes from 20 to 200 mesh. Write for full details today!



ROBINS HYDREX SCREEN
ROBINS CONVEYORS DIVISION

HEWITT-ROBINS INCORPORATED, PASSAIC, NEW JERSEY
When inquiring check CP 4505 on handy form, pgs. 2-3

Protect Clarity of Bottled Products with

POROUS STONE STRAINERS



Showing Strainer Head removed...from a 3-Filterstone unit of 15 gpm capacity. Discs are 7 1/2 inch diameter.

A LeVal Porous Stone Strainer placed just ahead of the bottling machine removes all lint, pipe scale, chips, and other particles which may contaminate your product after filtering.

Rigid LeVal Filterstones withstand acids and high temperature. Cleaned in a few minutes by backwashing or spraying. Write us for details.

LEVAL FILTERS WHITING CORPORATION

District engineers in 20 principal cities

15667 Lathrop Ave. Harvey, Illinois

When inquiring check CP 4506 on handy form, pgs. 2-3.

Processing Equipment

at the same controlled temperature, from every square inch of inner vat surface.

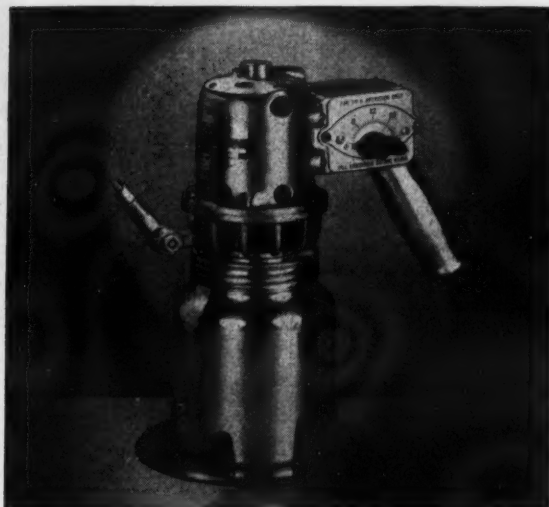
The thermostatically controlled oil bath also is employed to heat, indirectly, a new type of poppet-action dispensing valve that, it is claimed, cannot freeze or drip. Both gas-fired and electrically heated equipment is fully insulated and heated from inside to minimize heat losses. Leaflet 603-P contains blueprints, X-ray diagrams and complete specifications.

SOURCE — Made by Aeroil Products Company Inc., Dept. CP, 57th St. & Park Ave., West New York, N. J. . . . or for more information check CP 4507 on handy form, pages 2 and 3.

★

Electric Insect Sprayer Can Be Set for 1 to 24 min. Operation

Also manually controlled; atomizes, heats oil base insecticides



Automatic electric insecticide sprayer

USES — For automatic control of oil base insecticide sprays. For automatic stationary or portable spraying.

FEATURES — Great penetrating power coupled with complete atomization and ability of sprayed particles to float in air for long periods. Size of spray molecules may be controlled to apply correct amounts for crawling or flying insects.

May be started and left in closed room, shutting itself off after desired amount of insecticide is released.

DESCRIPTION — Automatic time switch can be set for operation between 1 and 24 minutes. Vane type compressor driven by $\frac{1}{8}$ hp universal motor gives static pressure of 35 psi, velocity of 22 psi. Special process draws liquid into compressor, mixes it with air, warms it slightly above room temperature for greater penetration.

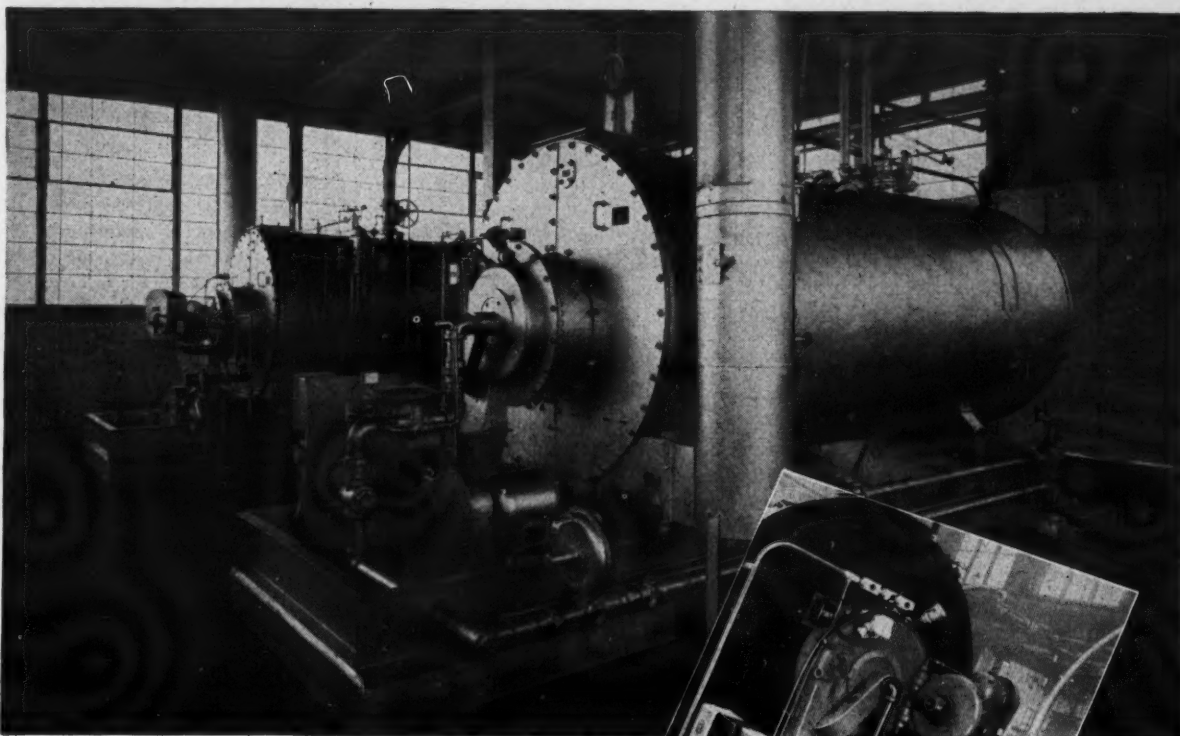
Nozzle adjusts through 180° arc. Unit is all-aluminum, weighs 2- $\frac{1}{2}$ lbs., plugs into ordinary electric outlet.

SOURCE — Development of Sprayer Corporation of America, Dept. CP, 1712 Payne St., Evanston, Ill. . . . or for more information check CP 4508 on handy form, pages 2 and 3.

MARCH, 1948

BURN GAS — BURN OIL — BURN EITHER

in Steam Generators Expressly Adapted to the Fuel in your Area



Installation shows two models of 200 HP. Cleaver-Brooks Steam Generators. Foreground model—gas-fired; model shown in rear equipped with a combination burner to burn either gas or oil.

Get Guaranteed 80% Efficiency with either Fuel with a Cleaver-Brooks Steam Generator

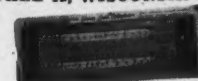
INSTALL a steam generator equipped to burn the available fuel in your area—either oil or gas. Cleaver-Brooks offers all three: (1) Oil-fired models, (2) gas-fired models, and (3) models equipped with a combination burner which permits alternate use of gas or oil, providing for a quick change-over from one fuel to the other. Equally important—you get Cleaver-Brooks' guarantee of at least 80% efficiency from full load down to 30% of rating—with either gas or oil as fuel.

And that's not all—more advantages are gained using a Cleaver-Brooks "packaged" steam generator. They give you clean, smokeless operation—eliminate fuel-ash

handling—require no high or costly stacks—no special foundations—fit under low headroom—flexible operation to meet fluctuating loads. Fully meet all codes.

Investigate Cleaver-Brooks Steam Generators—there's a size to fit your needs—15 to 200 p.s.i., 15 to 500 HP.

CLEAVER-BROOKS COMPANY
343 E. KEEFE AVE., MILWAUKEE 12, WISCONSIN



WRITE on your business letterhead for free Steam Cost-Calculator—a ready-reference slide rule showing comparative steam cost when using oil, gas or coal as fuel.

Cleaver-Brooks

"Packaged" STEAM GENERATORS

HAVE SERVED INDUSTRY FOR MORE THAN FIFTEEN YEARS

When inquiring check CP 4509 on handy form, pgs. 2-3

Inter-batch uniformity

... a vital step in manufacturing RAYON

Flattering hosiery from thermoplastic chips . . . a manufacture requiring a uniformly mixed product. Towering 360 cu. ft. mixers fulfill this exacting need by continuously blending individual mixes into one homogeneous stock.



Sprout-Waldron Vertical Mixers Offer:

- minimum floor space
- low power consumption
- inter-batch reservoir

From glue flakes to organic dyestuffs . . . Sprout-Waldron vertical blenders are proving their worth in widely diversified industries. Capacities range from 10 to 375 cu. ft. Construction features and materials meet individual installation requirements . . . from stainless steel to Plexiglas.

If you mix, reduce, separate, or handle material in bulk, consult Sprout-Waldron. Our valuable ADAPTIONEERING service — ingenuity + machines + experience — is at your command.

SPROUT WALDRON
Manufacturing Engineers

When inquiring check CP 4510 on handy form, pgs. 2-3

Processing Equipment

Aprons and Sleeves Resist Chemicals, Oils

Lightweight, pliable plastic aprons are bib or waist-type; all seams double-sewn



Oil and chemical-resistant apron

USES — Heavy-duty aprons, sleeves, coats, pants and jumper suits for resistance to acids, alkalies and chemicals.

FEATURES — Lightweight for wearing comfort, yet heavy enough to withstand long and excessive hard wear.

DESCRIPTION — Apron is made of brown, pliable plastic material, .015" thick. Fitted with grommets and tie strings at top of bib and at waist line.

SOURCE — Manufactured by Safety Clothing & Equipment Company, Dept. CP, 7016 Euclid Ave., Cleveland 3, O. . . or for more information check CP 4511 on handy form, pages 2 and 3.

*

Auger Packer Packs "Hard-flowing" Powder

Fills few-oz. to 5-lb. capacities at speeds up to 30 per minute

USES — Auger packer for packing dry, non-free-flowing powdered materials in cans, cartons, bags, jars and bottles with capacities of a few ounces up to about 5 lbs.

Also useful to large packers for han-



MODEL EU-16" UTILITY FILTER

● This multi-purpose filter is the only unit specially designed for use with all types of filtering mediums. It is available in two sizes: EU-16" and EFS-12", and a number of capacity sizes providing for 10 to 100 filtering surfaces. The elimination of rubber washers and gaskets is an important feature of the unit. The filtering medium forms a perfect leakproof seal.

Catalog 15 fully describes these units. Send for your copy, now!



ERTEL ENGINEERING
CORPORATION
KINGSTON NEW YORK

New York City Sales Office: 40 West 48th Street, New York 19, N. Y.

ASBESTOS FILTER SHEETS • ASBESTOS SHEET FILTERS
BOTTLE FILLERS • PORTABLE MIXERS • PLASTIC PUMPS

When inquiring check CP 4512 on handy form, pgs. 2-3



"Best Available Plant Engineers Consulted"

When the Foster-Forbes Glass Company contemplated the construction of a new batch-mixing plant, the best available plant engineers were consulted, including those of The Neff & Fry Company.

The plant consists of nine N. & F. concrete stave silos with conveyors, feeders, mixers, etc. Seven of the silos are 60 ft. high, 16 to 25 ft. diameter; two are 45 ft. high x 12 ft. dia.

Each silo has capacity for a 21 days' supply of a certain material. This is cited as an example of silo installations which are continuously on the agenda of our company. If you have a project for storing and handling flowable bulk materials of any kind, it will pay you to get complete information from us.

THE NEFF & FRY CO., CAMDEN, OHIO

NEFF & FRY STORAGE BINS

When inquiring check CP 4513 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

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BETTER
Flexible
METAL HOSE
FOR EVERY PURPOSE

- **SEAMLESS**—Constructed from one continuous piece of uniform thickness
- **PARALLEL CORRUGATION** assures maximum strength and flexibility
- **SPECIAL ALLOYS** can provide either heat or acid resistance
- **AVAILABLE** in wide variety of types to convey all kinds of liquids and gases
- **AVAILABLE** in special assemblies to meet your special requirements.

White Eclipse-Pioneer
for information.

ECLIPSE-PIONEER Division of
TETERBORO, NEW JERSEY

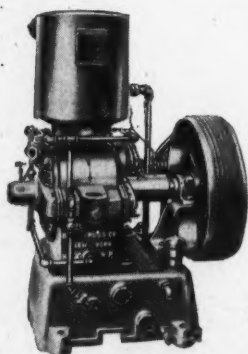


When inquiring check CP 4514 on handy form, pgs. 2-3

TOP VACUUM EFFICIENCY
IMPROVES YOUR PRODUCT

With Beach-Russ Rotary Piston Pumps on your processing equipment you get higher volumetric efficiency and lower absolute pressures that save production time and improve product quality.

These pumps operate at only 200 R.P.M., are quiet and vibrationless; for wet or dry vacuum. Capacities to 845 c.f.m. Write for Catalog 84.



BEACH-RUSS Rotary Piston
HIGH VACUUM PUMPS

BEACH-RUSS COMPANY
46 CHURCH STREET • NEW YORK 7, N. Y.

When inquiring check CP 4515 on handy form, pgs. 2-3

MARCH, 1948

Processing Equipment

dling sample or market-testing runs of new products.

FEATURES — Packs materials equally throughout container, eliminating 98% of dusting, manufacturer reports. Minimizes operator-fatigue by eliminating foot pedals. Requires only an unskilled operator. Versatile, flexible.

DESCRIPTION — Users report speeds up to 30 packages per min., depending on product and size of container. Capacity, from a few ounces to about 5 lbs.

Operator merely places empty container on filling platform; remainder of operation is automatic. Elevator table lifts empty container to point where auger and tube are almost touching inside-bottom of container. Encased in the tube, auger actually forces material into container, this packing action exerting downward force which pushes elevator table gradually down until exact amount of material is packed in container.

At this point, a sensitive mercury switch energizes a solenoid to disengage clutch, and auger stops packing. Machine is completely encased, both for protection and appearance, and is constructed to same specifications as larger, fully automatic machines.

SOURCE — Product of Triangle Package Machinery Company, Dept. CP, 906-924 N. Spaulding Ave., Chicago 51, Ill. For more information check CP 4516 on handy form, pages 2 and 3.

*

Stainless Steel Valves
Sized 1/2" to 2"

Outside screw-and-yoke type
units have bolted bonnets

USES — Stainless steel valves for processing use wherever service requirements call for corrosion resistance.

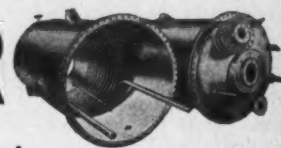
DESCRIPTION — Outside screw-and yoke type, in 1/2 to 2" sizes. Bolted bonnet, tapered wedge and screwed ends. All materials contacting the fluid are of low-carbon type 316 stainless steel.

Corrosion-resistant packing and gaskets. Yoke bushings, through which stem rises, are renewable.

SOURCE — Product of The Ohio Injector Company, Dept. CP, Wadsworth, O. . . or for more information check CP 4517 on handy form, pages 2 and 3.

FAR BEYOND FIDELITY TO
BLUE PRINTS AND SPECIFICATIONS

NOOTER

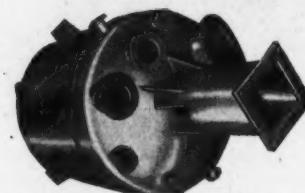


Interior and exterior of twin processing tanks of solid Monel. 5' diameter by 10' high.

Offers advanced fabrication techniques resulting from over half a century of progressive experience. Qualified as Specialists in metallurgical fabrication NOOTER makes available a background of technical knowledge of the properties and behavior of metals and alloys.

10" diameter x 26' long chemical tower made in five sections of pure copper. All welding was performed by the carbon arc method.

STEELS • • ALLOYS • • PURE METALS
LINED • • CLAD • • or SOLID PLATE



One of a battery of solid nickel processing tanks, 5' x 5', with steel agitator support on dished head.

Rigid adherence to your detailed specifications will determine structural

exactness and efficient

performance, but—
Include also an evaluation of NOOTER specialized services covering the many vital factors in plate work for strength and safety combined with resistance to corrosion and high temperatures.



4' x 13' Cupro-nickel salt water treating vessel complete with expansion coil.

Send for your copy of the new corrosion-resistant metal tables — just off the press.



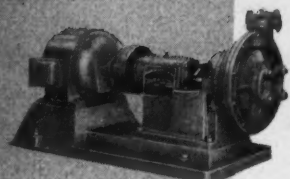
JOHN NOOTER Boiler Works Co. • 1428 S. Second St., St. Louis 4, Mo.

When inquiring check CP 4518 on handy form, pgs. 2-3

Page 85

OLIVITE

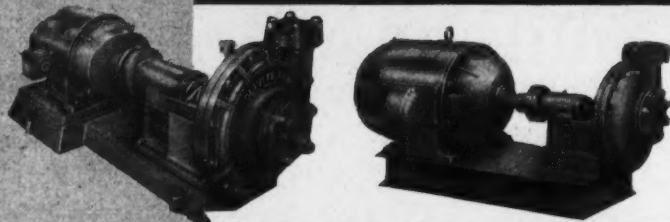
ACID-HANDLING



PUMP

Centrifugal Pumps— Combining High Efficiency

With Protection of Parts



If chemicals were like water, there would be little trouble pumping them in and around a process plant. But they aren't and the pump that is the best buy is one that combines effectiveness of pumping with effectiveness of protection. For this, we recommend our Olivite Acid-Handling Pump.

Hydraulically, it will stand up with the best of pumps. Chemically, it offers distinct advantages. Shaft and bearings are fully protected from the chemicals. Every inch of contact surface is protected by a durably bonded, special rubber highly resistant to practically all acids and to many chemicals, hot or cold.

The sales record of Olivite Pumps is one of "repeat orders." One large plant recently ordered 50 more Olivites to round out a total of about 150 units. Such a pump is likely to do a good job for you, too. Why not find out? Bulletin 308-R will give you the details. In writing for it, tell us about your problem.

Shipment from Eastern or Western Factory!

OLIVER UNITED FILTERS INC.

New York 18, N. Y.
33 West 42nd Street

San Francisco 11
California

Sales & Manufacturing
Representative:
E. Long Limited
Orillia, Canada

Chicago 1, Ill.
221 N. LaSalle Street
Western Sales Division
Oakland 1, Calif.
2900 Glascock Street



Factories: Oakland, Calif. • Hazleton, Pa. • Orillia, Canada • Melbourne, Australia

When inquiring check CP 4519 on handy form, pgs. 2-3

Processing Equipment

"Glass Bristle" Brush Applies Acids, Soldering Fluxes

Resists any acid not affecting glass; becomes soft, pliable when wet

USES — Acid applicator-brush for applying acids. For use in any acid which does not affect glass; for example: nitric and chromic acid, soldering fluxes, chloride of iron, etc.

FEATURES — Any manufacturer using acids for cleaning purposes may receive one of these brushes on a trial basis, manufacturer reports.

DESCRIPTION — Made with a soft tuft of "FybR-glass" solidly embedded in wooden handle of conventional paint-brush type. When wet, FybRglass becomes soft and pliable in same manner as ordinary brushes.

The brush illustrated measures 3" wide, 3/8" thick, and bristles extend 2 1/2" from handle. Other sizes can be made for special requirements.

SOURCE — Made by The Eraser Company, Inc., Dept. CP, 104 S. State St., Syracuse, N. Y. . . . or for more information check CP 4520 on handy form, pages 2 and 3.

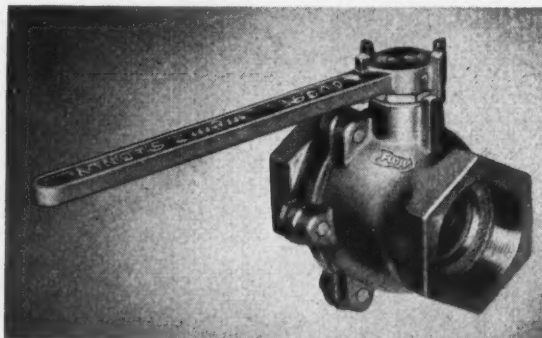


Acid applicator-brush

Full-Flow Ball Type Valve For Water, Gas, Petroleum, Alcohol

Full-open area does not permit shape of fluid stream to change; made in bronze

USES — For handling water, air, carbon dioxide, nitrogen and other gases; paraffin and asphalt base petroleum. Also alcohol, paper fluids and many other types of liquids and gases.



Full flow valve — all size 1/2 to 2 inches

FEATURES — Full-flow; tight-seal; quick opening and closing. Valve is constructed with a floating bronze ball that is hard chrome plated making it extremely



Listed by Underwriters Laboratories, Inc., and Factory Mutual Laboratories.

HIGH-VOLATILE LIQUID STORAGE NEEDS DEPENDABLE FIRE PROTECTION

Blaw-Knox Aquatomic Fog Nozzles have four features that assure dependable protection:

- 1 Non-clogging.
- 2 Maintain fog patterns at lowered pressures.
- 3 Drive fog to base of fire.
- 4 Give maximum cooling and quenching effect.



Also—
Blaw-Knox offers Standard Wet and Dry Pipe Systems, as well as Thermostatically Controlled Pre-Action and Deluge Systems.

Write for details.

Aquatomic
FOG NOZZLES
by
BLAW-KNOX
SPRINKLER DIVISION

831 Beaver Avenue, N.S.,
Pittsburgh 12, Penna.

When inquiring check CP 4521 on handy form, pgs. 2-3

CUT

your water costs

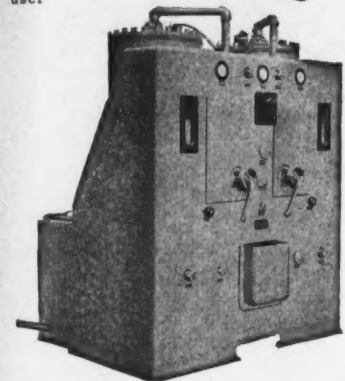
from this

\$6.00
Per Thousand Gallons
by STEAM DISTILLATION

to this*

45¢
Per Thousand Gallons
by DEIONIZATION

*Actual figures
from a typical
user



with the Dorrco D-I System

Reports from users throughout the chemical industries show that the Dorrco D-I System slashes water production costs to a fraction of former levels wherever used.

produces water of distilled quality

Using high-speed, high-capacity ion-exchange resins, the Dorrco D-I System produces the equivalent of distilled water... in most cases comparable to standard U.S.P. distilled quality.

100 to 1000 gallons per hour

The self-contained Dorrco D-I "E Unit" illustrated, is available in 6 sizes with capacities ranging from 100 to 1000 gallons per hour. Other Dorrco D-I Systems... ranging from a few gallons to several million gallons capacity per day... can be designed to fit individual requirements.

simple to operate

Compact and easy to start up, the "E Unit" requires no operator except during regeneration periods. Conductivity controls indicate quality of treated water... positively prevent raw water from contaminating treated water storage.

prompt shipment

Component parts of D-I "E Units" are carried in stock—need only to be assembled to fit your individual requirements prior to shipment.

for further information

Write now for your copy of Bulletin #4081... just off the press... packed with 24 pages of data on all types of D-I Systems.

THE DORR COMPANY
ENGINEERS

Ion-Exchange Division

570 LEXINGTON AVE., NEW YORK 22

When inquiring check CP 4522
on handy form, pgs. 2-3

MARCH, 1948

Processing Equipment

resistant to scratching, pitting and abrasion. No exposed seating surface in open or closed position. Easy to open or close under full pressure. Installed in any position.

DESCRIPTION — The floating bronze ball used with these valves in combination with resilient synthetic rubber seat allows abrasive particles, when the valve is opened or closed, to be automatically wiped clear of the seating surface without injury to the ball or seat. When the valve is in open position the pressure of the fluid will automatically position the ball against the synthetic rubber seat to form a tight seal. The valve does not depend upon mechanical parts to maintain proper alignment of ball and seat.

The valve is made in bronze with screwed ends in all pipe sizes from 1/2 inch to 2 inches for 150 psi working pressure.

SOURCE — The Rockwood Sprinkler Co., Dept. CP, 38 Harlow St., Worcester, Mass. . . . or for more information check CP 4523 on handy form, pages 2 and 3.

*

Constant Temp. Water Bath Operates Below Room Heat

*Accurate to 1/2°; use with hydrometer method
to obtain particle-size distribution*

USES — Constant temperature water bath for operation below room temperature. Designed primarily for use with hydrometer method for obtaining particle-size distribution.

FEATURES — Operates between 32°F and room temperature to an accuracy of 1/2 degree. Provides ample room for 8 one-liter cylinders.

DESCRIPTION — Over-all dimensions: 24 x 12 x 20". Equipped with solenoid water valve, motor-driven water-circulating pump, and thermostatic control. Solenoid

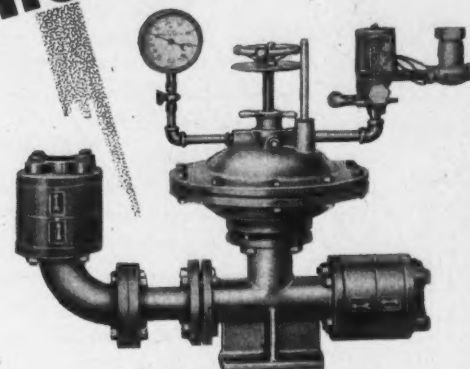


Constant temperature water bath

valve admits cool water as required to maintain desired temperature. When bath temperatures lower than that of tap water are required, inlet water is cooled by mechanical or ice-refrigeration means. No. 515 Constant temperature water bath.

SOURCE — Developed by Harry W. Dietert Company, Dept. CP, 9330 Roselawn Ave., Detroit 4, Mich. . . . or for more information check CP 4524 on handy form, pages 2 and 3.

HIGH in Versatility



O.D.S. DIAPHRAGM SLURRY PUMP

LOW in Maintenance

This is the diaphragm slurry pump that is handling effectively such products as: aluminum hydrate, magnesium chloride, sodium tungstate, sodium sulphate, various metallurgical slurries; sugar, salt, organic and inorganic products; hydrochloric, sulphuric, phosphoric acids; and cubed vegetable soup.

The diaphragm is actuated in timed pulses by either air or gas pressure, by vacuum, or by a combination of both. It is designed to pump against heads up to 200 feet and to charge either by gravity or against lifts up to 15 feet.

Low maintenance features include: (1) no mechanical linkage to the diaphragm; (2) uniform force on diaphragm; (3) no holes punched in the diaphragm; (4) ample clearance in ball valves for passage of solid matter; (5) no motor, stuffing box, packing or high speed moving parts.

With several sizes from 1 to 3 inches, you can find in a single unit or battery the capacity required for your slurry pumping job. Write for Bulletin 309.

Shipment from Eastern or Western Factory!

OLIVER UNITED FILTERS INC.

New York 18, N. Y.
33 West 42nd Street

San Francisco 11
California

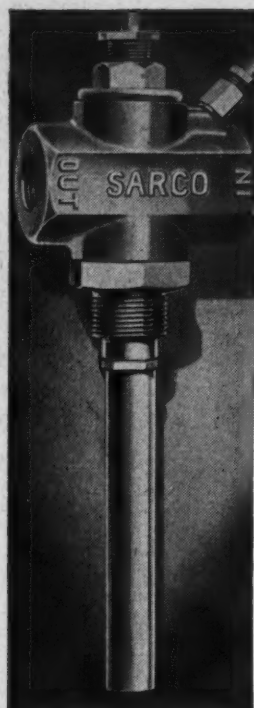
Sales & Manufacturing
Representative:
E. Long Limited
Orillia, Canada

Chicago 1, Ill.
221 N. LaSalle Street
Western Sales Division
Oakland 1, Calif.
2906 Glasecock Street



Factories: Oakland, Calif. • Hasleton, Pa. • Orillia, Canada • Melbourne, Australia

When inquiring check CP 4525 on handy form, pgs. 2-3



SARCO TR-40 COOLING CONTROL

For engine and compressor jackets, condensers and degreasers. Throttles the flow of fresh cooling water, allowing only enough to flow to the cooling system to maintain the desired water outlet temperature. Factory temperature setting can be adjusted 10°F. lower and 30°F. higher than factory calibration. The TR-40 saves up to 50% of the cooling water, increases the efficiency and protects the equipment. Ask for Catalog 700.

212

SARCO SARCO COMPANY, INC.
SAVES STEAM Empire State Bldg., New York 1, N.Y.
SARCO CANADA, LTD., TORONTO 5, ONTARIO

When inquiring check CP 4526 on handy form, pgs. 2-3

Processing Equipment

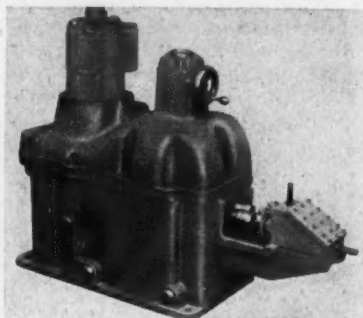
Constant Flow Pump Delivers as Little as 75 ml per hour

No pulsation; change gears, varying length of stroke gives capacity range of 50-1

USES — For chemical processing application in which a pump is required that will: (1) Pump at constant controlled flow without pulsation. (2) Pump at constant controlled flow in very low capacities—down to 75 ml per hour as a maximum for an individual pump.

FEATURES — Flexibility. The use of interchangeable gears to vary capacity. Availability of various corrosion resistant materials for liquid ends. Liquid ends and plungers are interchangeable. The pump is thus advantageous for laboratory and pilot plant use as well as for full scale production, as capacities are easily changed. The capacity of the pump is fully adjustable while it is in operation.

DESCRIPTION — This "Constametric" pump achieves



Pump with indicating hand micro adjustment

constant flow by translation of the motion of the driver through cams to cause a plunger to move forward at a constant rate of speed. Two plungers in two displacement chambers are employed.

They have a common suction and common discharge connection. There are a total of eight check valves, two on the suction and two on the discharge of each displacement chamber, arranged in the maker's own step-valve design. Air or any entrained gas is automatically discharged to assure positive check valve action. As one plunger nears the end of its stroke, its speed is slowed at a rate equal to the start forward speed of the second plunger so that the rate of total discharge volume remains a constant.

The capacity of the pump is fully adjustable while pump is in operation, from a maximum to practically zero, through an indicating hand micro adjustment. There will be no variation in capacity delivered with variation in discharge pressure. Pneumatic adjustment and motorized adjustment of the stroke will be made available as development of this unit progresses.

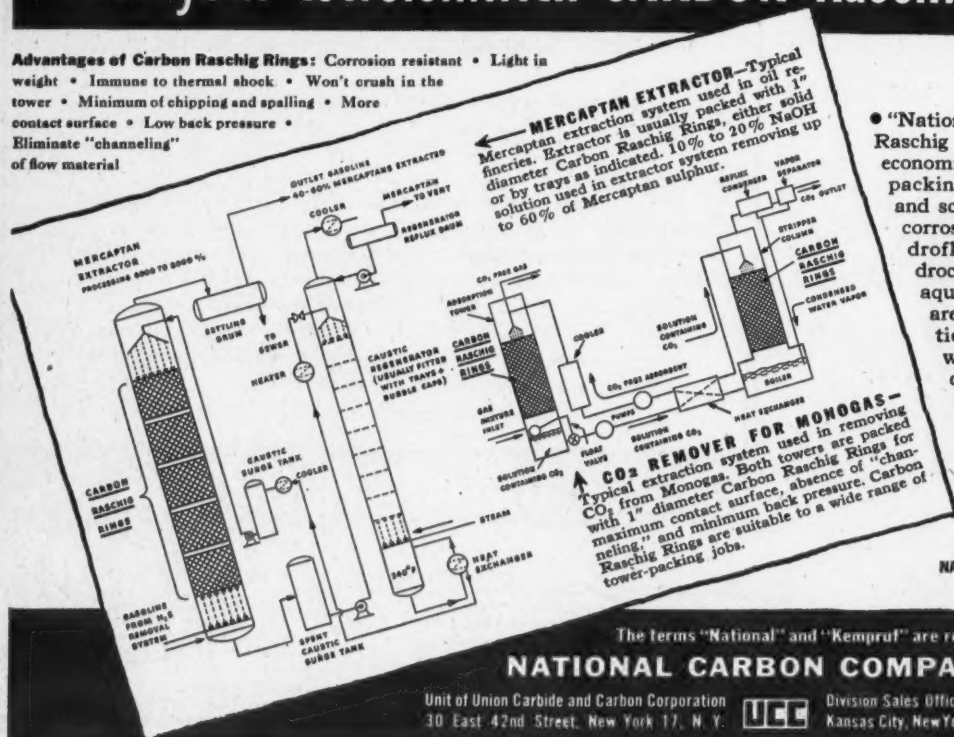
Thymotrol variable speed drive by electronic control is now available for use in automatic control systems.

The speed of a "Constametric" pump may be changed in the field, by use of the change gears furnished, to any of the speeds designated in the speed range. The capacity can be further regulated with a high degree of accuracy over the 10 to 1 range by changing the length of the stroke. The capacity within any range is therefore accurately adjustable over a 50 to 1 ratio.

SOURCE — The pump, which will be in production within the next few months, is a development of Milton

Pack your towers...with CARBON Raschig Rings!

Advantages of Carbon Raschig Rings: Corrosion resistant • Light in weight • Immune to thermal shock • Won't crush in the tower • Minimum of chipping and spalling • More contact surface • Low back pressure • Eliminate "channeling" of flow material



• "National" "Kempruf" Carbon Raschig Rings provide the most economical and efficient tower-packing material for reaction and scrubbing towers handling corrosive agents, such as hydrofluoric acid, organic-hydrochloric mixtures, and hot aqueous alkalis. These rings are also excellent in extraction systems...towers in which sudden temperature changes result in severe thermal shocks...rectifying towers...and tower processes where thorough dispersion is essential to satisfactory operation.

For more information, write to:
NATIONAL CARBON COMPANY, INC.
Dept. X

The terms "National" and "Kempruf" are registered trade-marks of
NATIONAL CARBON COMPANY, INC.

Unit of Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N. Y. **UCC** Division Sales Offices: Atlanta, Chicago, Dallas, Kansas City, New York, Pittsburgh, San Francisco

When inquiring check CP 4527 on handy form, pgs. 2-3

Uniform Separation

FOOD PRODUCTS — CHEMICALS — METALLICS
NON-METALLIC MINERALS

The new model GAYCO Centrifugal air separator makes possible the uniform and increased recovery of fine material within a range of 40 to 400 mesh.

• Greater Capacity
• Cleaner Trailings

• 99% Through
325 Mesh

• 25% to 30%
greater recovery
of fines

• Not affected by
variation in speed
or rate of feed

TIMKEN BEARING EQUIPPED

The Gayco Separator
Handles
SUCH PRODUCTS AS

BAGASSE
CASEIN
COCOA POWDER
COTTONSEED
MEAL
FERTILIZER

GROUND HAIR
GROUND OATS
GUM ARABIC
SOY FLOUR
SPICES
SUGAR



Universal Road Machinery Co.

RUBERT M. GAY DIVISION 117 Liberty St. New York 6, N. Y.
Canadian Representative: F. H. Hopkins & Co., Ltd., Montreal
FACTORY & LABORATORY, KINGSTON, N. Y.

When inquiring check CP 4528 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

Processing Equipment

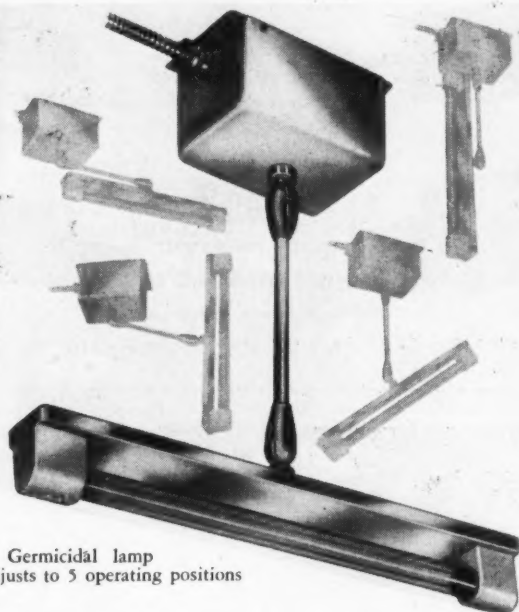
Roy Co., Dept. CP, 1300 East Mermaid Ave., Philadelphia, Pa. . . or for more information check CP 4529 on the handy form, pages 2 and 3.

★

Lamp Destroys Air-Borne Bacteria, Mold Spores

Adapts to low-ceiling areas. Operates at normal or freezing temperatures

USES — Germicidal lamp for product protection. For destroying air-borne bacteria and mold spores which cause contamination and spoilage of drugs, beverages, cosmetics, meats and other perishables.



Germicidal lamp adjusts to 5 operating positions

Also useful for sanitizing wash rooms, lavatories, etc.

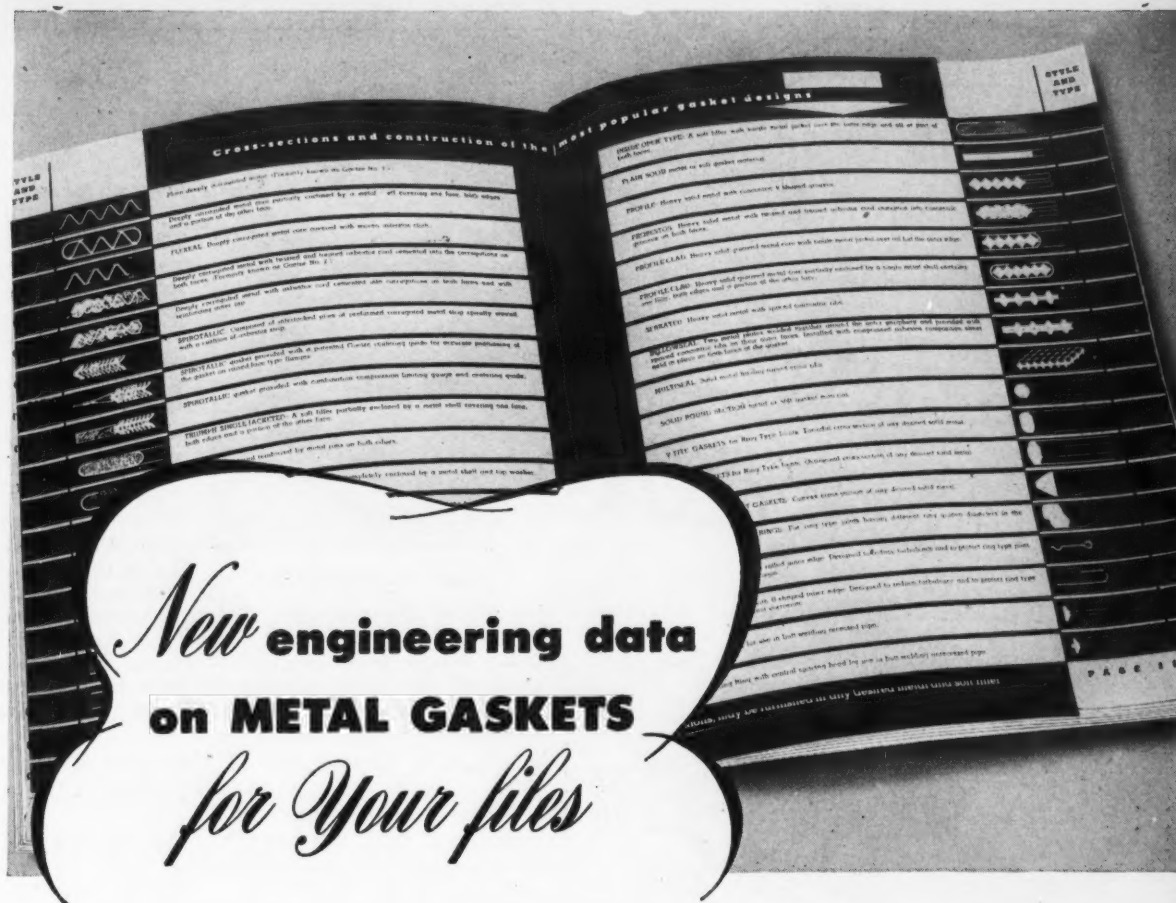
FEATURES — Flexible: adaptable to low ceiling areas and other conditions. Operates at normal or freezing temperatures. Designed for efficient ultraviolet irradiation.

DESCRIPTION — Swivel joints permit movement of complete unit, or parts of it, to any position practical for thorough irradiation. Stem may be suspended vertically with lamp horizontal or perpendicular, depending on conditions.

Where downward reflection of rays is indicated, or in low ceiling areas, stem can be swung upward, out of the way, flush with ceiling, and lamp swiveled horizontally or at an angle.

Unit is equipped with Hanovia cold cathode lamp, in quartz-like envelope. Entire fixture is polished aluminum. A flexible, polished aluminum cable, 12' long, with unbreakable plug, fits any convenience outlet. Fixture operates on 110-120 volts AC.

SOURCE — Product of Hanovia Chemical & Manufacturing Company, Dept. CP, Newark, N. J. . . or for more information check CP 4530 on handy form, pages 2 and 3.



... cross-sections and construction details included in new Johns-Manville Goetze catalog

THE HANDY reference chart shown above is one of many features of the new J-M Goetze Gasket catalog which make it easier for you to select metal gaskets. It gives cross-sections and construction details of more than 30 basic Goetze Gasket designs that are available now to meet your requirements.

Here, too, you will find complete descriptions of such noteworthy developments as the Goetze Bellowseal—the gasket with the automatic self-sealing expansion joint for high temperature, high pressure service . . . the versatile Spirotallic with its combination of high

mechanical strength and resilience . . . the Goetze V-Tite, a special solid metal gasket for sealing ring type joints . . . as well as the many styles of boiler, cylinder head and heat exchanger gaskets in the complete Goetze line.

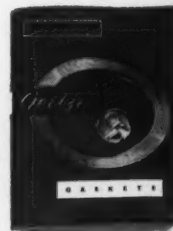
In fact, there isn't an important metal gasket development which is not covered—or a single metal gasket problem to which the new J-M Goetze Gasket catalog won't help you find a practical, money-saving answer!

If you buy or use metallic gaskets, you will want to have full information about these latest Goetze developments at

your finger tips. Write, on your company letterhead, for your copy of the new Goetze Gasket catalog. Address Johns-Manville, Box 290, New York 16, N. Y.

SEND FOR YOUR COPY TODAY

The new Goetze Gasket Catalog containing the handy gasket reference chart shown above has 48 pages of up-to-the-minute gasket information. Write for your copy today.



Johns-Manville Goetze Gaskets

When inquiring check CP 4531 on handy form, pgs. 2-3

THESE ARE THE TROUBLEMAKERS
YOU WISH TO STOP



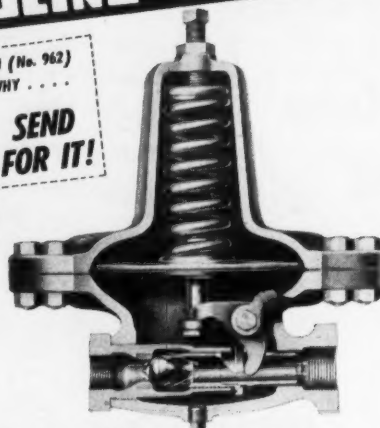
HERE IS THE VALVE THAT
WILL STOP THEM

CASH STANDARD TYPE 1000
Streamlined
PRESSURE
REDUCING VALVE

THIS IS THE BULLETIN (No. 962)
THAT TELLS YOU WHY



**SEND
FOR IT!**



and here is proof from a user

"We are more than satisfied with our STREAMLINED Valve performance. They are all over this plant and, frankly, I have forgotten about most of them as I never have any trouble."

"What I like about these valves is that in some cases our initial pressures vary considerably, yet the reduced pressure is held steady. This work is all processing and is very important."

"Your competitors will have a hard time convincing me there is a better valve to be had."

THESE ARE THE BENEFITS YOU GET BECAUSE OF ITS
ASPIRATOR AND STREAMLINED FLOW

Maximum Capacity When Needed Most • Accurate Pressure Control
Under Toughest Working Conditions • Trouble-Free Service •
Smooth Operation • Tight Closure
Accurate Regulation • Speedier Production
Results • Elimination of Failures • Constant Delivery Pressure
Cost Saving Operation • No Spoilage
Practically Zero in Maintenance Costs

CASH STANDARD
CONTROLS...
VALVES

A. W. CASH COMPANY
DECATUR, ILLINOIS

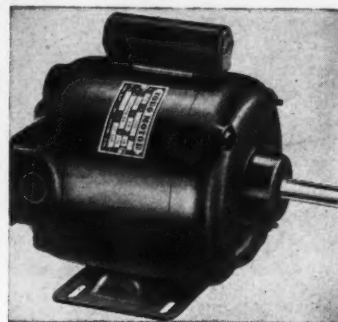
When inquiring check CP 4532 on handy form, pgs. 2-3

Page 90

Processing Equipment

Motor Combines Low Current, High Torques in Starting

Triple seal-wound units in 1/6, 1/4, 1/3 and
1/2 hp frame ratings handle pumps, stokers



Triple seal-wound motor

ing torque characteristics. Rotor is all-welded, pure copper bar construction. Low starting current. Splash-proof design with sturdy steel frames and die-cast aluminum alloy end bells with cast-in terminal for easy wiring. Solid or resilient bases, slotted to facilitate belt adjustment.

Furnished in frame rating of 1/6, 1/4, 1/3, 1/2 hp, single phase, 60 cycle, 115-230 volt. Heavy-duty-precision sleeve or ball bearings.

SOURCE — Type CSI motors are available from Torq Electric Manufacturing Corporation, Dept. CP, 1041 Interstate St., Bedford, O., or for more information check CP 4533 on handy form, pages 2 and 3.

★

Abrasion Tests Prove Wearing Qualities of Canvas Glove

*US Testing Company indicates non-slip model has
more than double wear-resistance*

USES — Canvas work gloves for hard wear and rough, abrasive services. For gripping and increased protection.

FEATURES — Long-wearing, water-repellent and non-slipping.

DESCRIPTION — In tests made by United States Testing Co., 5 samples of glove fabrics were clamped to movable carriage and constantly in contact with a lever arm covered with fine Aloxite cloth exerting pressure of approximately 33 ozs., or 1.03 lbs. per sq. in. Fabrics were abraded until approximately same degree of wear was obtained, or until a few of the ends were ruptured. Abrasions were in both warp and filling directions.

Number of single strokes required to obtain this degree of wear on each fabric is tabulated as follows: Riegel Super Canton, 9400; quilted 18 oz. Br. flannel, 2600; 12 oz. reg. Canton flannel, 1200; 10 oz. reg. Canton flannel, 800; 8 oz. reg. Canton flannel, 625.

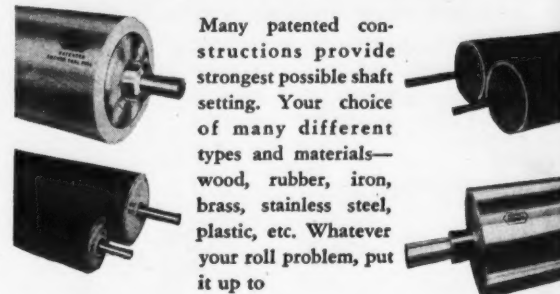
Similarly favorable results are shown for Coefficient of Friction test.

SOURCE — Super Canton gloves are product of Riegel Textile Corporation, Dept. CP, 342 Madison Ave., New York 17, N. Y. . . . or for more information check CP 4534 on handy form, pages 2 and 3.



MANY
INDUSTRIAL
ROLL
PROBLEMS
are solved
by using

"SHAF-TITE" ROLLS



Many patented constructions provide strongest possible shaft setting. Your choice of many different types and materials—wood, rubber, iron, brass, stainless steel, plastic, etc. Whatever your roll problem, put it up to

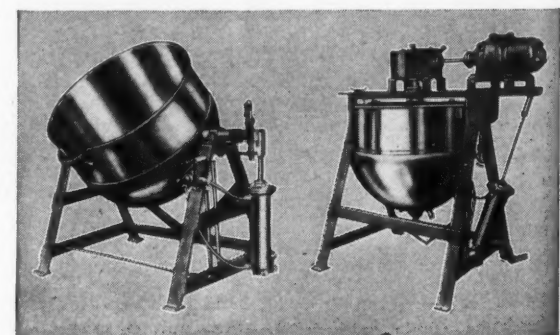
RODNEY HUNT

SEND FOR CATALOG TODAY!

RODNEY HUNT MACHINE CO.

273 Maple Street, Orange, Mass.

When inquiring check CP 4535 on handy form, pgs. 2-3



FOR SAFETY-choose

LEE
Corrosion-Resistant

KETTLES

WITH HYDRAULIC OPERATING CYLINDERS •

Free! New Technical Bulletins

LEE METAL PRODUCTS CO. INC.

418 PINE STREET . . . PHILIPSBURG, PA.

ALL LEE KETTLES ARE MADE TO A S M E CODE

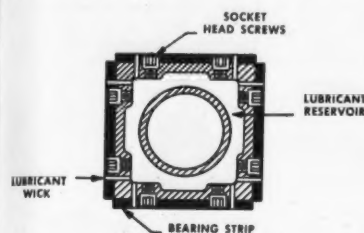
When inquiring check CP 4536 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

Processing Equipment

Flexible Coupling 30% Longer-Wearing

*Shafts operate misaligned without
transmitting reactionary stresses*



Improved flexible coupling

USES — Improved flexible coupling, designed for longer wear and increased service.

FEATURES — Tests show wearability to be increased as much as 30%, manufacturer reports, greatly reducing friction. Permits shafts to operate misaligned without transmitting reactionary stresses which may increase bearing temperature and accelerate rate of bearing-wear in the prime mover or driven machine.

DESCRIPTION — Coupling is described as obtaining flexibility through design rather than through flexing of a resilient material. Only wear-absorbing part is the center member, or block, which has free sliding action between the coupling's two jaw flanges. Center member is faced with bearing strips which are the points of contact with the jaw flanges.

Recent improvement of center block permits bearing strips to slide upon the center block to which they are secured. Hence, friction is reduced between bearing strips and flanges as the coupling rotates. Coupling is based on Oldham principle: each of two jaw flanges, mounted on the shafts, engages opposite parallel surfaces of a square center member, the engaged surfaces of each being at right angles. Center member slides between the two integral jaws of each jaw flange in directions relatively at right angles as the whole coupling rotates, transmitting the torque.

SOURCE — Manufactured by American Flexible Coupling Company, Dept. CP, Erie, Pa. . . . or for more information check CP 4537 on handy form, pages 2 and 3.

For more information on product at right, specify CP 4538 . . . see information request blank between pages 2-3.

Yarway Impulse Traps

At Thompson Aircraft Tire Corporation., San Francisco, four little 1-inch Yarway Impulse Steam Traps do a giant job on the largest tire retreading mold in the world.

Here on this mold that can take tires taller than a man, Yarways help reach operating temperature of 294° in only 45 minutes . . . and hold this temperature for the four and one-half to seven hours required for the cure.

That's typical of Yarway performance on all kinds of steam equipment. *They get equipment hotter, sooner . . . and keep it hot.* When steam is turned on, Yarways open wide, discharging air and condensate *continuously* until working temperature is reached. Then valve opens and closes at short intervals, maintaining peak efficiency.

Small size, easy maintenance, low cost are other Yarway features. Try one or two on your steam equipment today. See your nearest Mill Supply Dealer, or write for Bulletin T-1739.

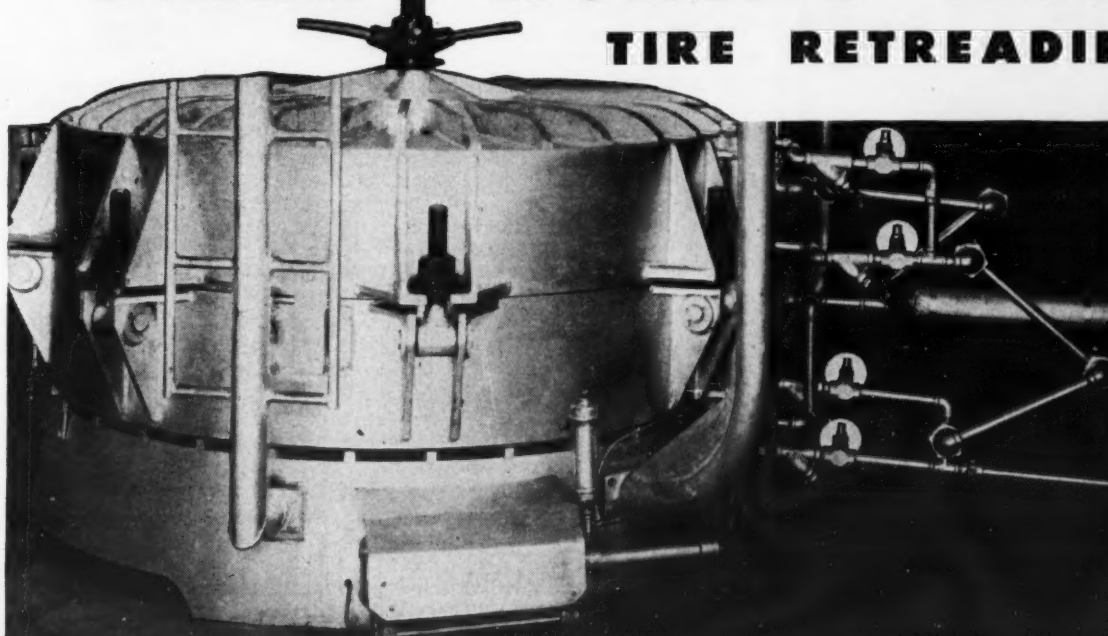
YARNALL-WARING COMPANY
125 Mermaid Ave., Philadelphia 18, Pa.

*Yarway Impulse Steam Traps are now made and sold in
Canada and Great Britain.*



OVER
525,000
SOLD

DRAIN WORLD'S LARGEST.. TIRE RETREADING MOLD



World's largest tire retreading mold, made by Super Mold Corporation, installed at Thompson Aircraft Tire Corporation. Mold is large enough to take a tire weighing nearly half a ton. Divided into four sections, one Yarway trap drains each section. Two traps on upper sections move up and down with the mold.

YARWAY IMPULSE STEAM TRAP

B. F. Goodrich Chemical Company

has for sale these GOOD-RITE chemicals



In Commercial Quantities

Phenyl B Naphthyl Amine • Distilled • Commercial

Mixed Mono-and Diheptyl Diphenyl Amines

Isopropoxy Diphenyl Amine

p Hydroxy Diphenyl Amine

N-Nitroso Diphenyl Amine

Diphenyl p Phenylene Diamine

Di B Naphthyl p Phenylene Diamine

Monobenzyl Ether of Hydroquinone

Di Isopropyl Dixanthogen

Mixed Ethyl and Dimethyl Mercaptothiazoles

Polymerized Trimethyl Dihydro Quinoline



In Pilot Plant Quantities

Dibenzyl Ether of Hydroquinone

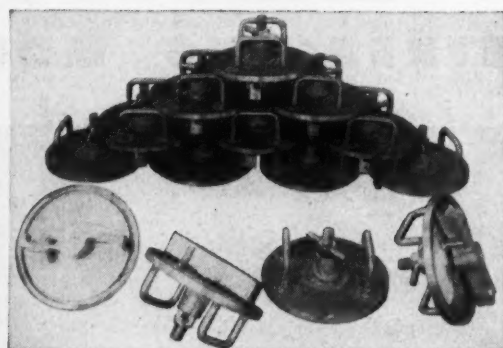


For additional information please write

B. F. Goodrich Chemical Company A DIVISION OF THE B. F. GOODRICH COMPANY
Department CG-3, Rose Building, Cleveland 15, Ohio

When inquiring check CP 4539 on handy form, pgs. 2-3

ALLOY Stainless Fabrication



On every stainless job, it is well to get an Alloy quotation—to find out what you can gain in satisfactory work and exceptional service.

Tell us your needs, and ask for Bulletin CP 30.

ALLOY Manufacturing Co., Inc.

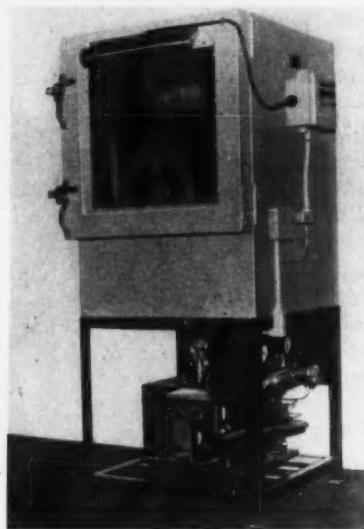
Curry and Horning Road, Pittsburgh 27, Pa.

When inquiring check CP 4540 on handy form, pgs. 2-3

Processing Equipment

Temperature-Humidity Lab Unit Range Is Plus 20° to 200° F.

Relative humidity controlled above or below ambient at wet-bulb temperature of 33° F.



Laboratory test unit's working area is 18" x 18" x 18"

FEATURES — It is claimed that the relative humidity can be controlled above or below ambient, at a minimum wet bulb temperature of 33 degrees F. (An extended surface dry-expansion coil is used to lower the temperature or relative humidity, independently.)

Versatility of control for creating any desired condition is said to be facilitated through conveniently located, independent switches for heating, cooling, humidifying and dehumidifying circuits, and the inclusion of an air-flow damper to proportion the air-flow through the heating and cooling compartments. Fresh air inlet and outlet are provided when conditions require their use.

DESCRIPTION — This self-contained laboratory testing unit accurately controls temperatures and relative humidity within a working chamber having a clear space 18" x 18" x 18". The conditioning equipment is mounted directly under the working space in the chamber and includes a heating unit, vaporizer type humidifier, and a 1/3 HP air-cooled compressor, having the maker's new thermostatic expansion valve incorporated in the refrigeration system. An external light illuminates chamber interior during tests. Inspection port on door affords view of entire working area. Close-control is provided through accurately calibrated thermostatic elements and dial-type temperature indicators.

The interior of the working space in the chamber is made of copper or stainless steel to withstand conditions within the cabinet during tests and to permit thorough cleansing without harm to the cabinet. It is said that power consumption will not exceed 1.8 KW. Standard models are equipped for operation on 115 volt, 60 cycle, single phase current, but may be secured to operate on 230 volts when desired.

SOURCE — Data on this laboratory test apparatus from Tenney Engineering Inc., Dept. CP, 26 Avenue B, Newark 5, N. J. . . . or for more information check CP 4541 on the handy form, pages 2 and 3.

USES — For laboratory testing, providing a range from plus 20 degrees F. to plus 200 degrees F. An extension of this temperature range is available when desired. With this unit any required temperature within the established limits may be reached quickly, with the maximum range of temperature change being 20 degrees F. per minute. Temperature maintained with a tolerance of plus or minus 2 degrees F.

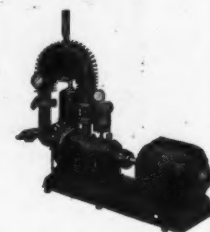
63% Increase In Capacity Of Six Revolving Drum Dryers

The following report is typical of the hundreds of processing plants making better use of steam with the Cochrane C-B High Pressure Condensate Return System:

"The C-B unit draining the battery of 6 Louisville dryers produced exactly the desired 8% moisture. The condensate is being returned at a temperature between 285 and 292° F. The inlet pressure to the driers varies between 42½ lbs. and 47½ lbs. Their production is uniform and unbelievably high. Although Louisville Drier Company rates each of these driers at 1360 lbs. per hour, their last average run was 2050 lbs. per hour. Needless to say they are pleased."

(3 more C-B units were purchased by this user following these results.)

For details of the C-B System write for Publication 3250.



COCHRANE CORPORATION
3147 N. 17th STREET PHILADELPHIA 32, PA.

**COCHRANE CONDENSATE
C-B BOOSTER
SYSTEM**

OF HIGH PRESSURE, HIGH TEMPERATURE CONDENSATE RETURN

When inquiring check CP 4542 on handy form, pgs. 2-3

WHY WEAR "BLINDERS" FOR PROTECTION?



ACME Full-Vision Gas Masks Provide Protection You Can See Through

No need to obstruct your vision to get protection against gas hazards. Acme's larger lenses mean clear seeing ahead — up, down and to either side. Another exclusive advantage is Acme's Dead Air Check Valve which limits the amount of carbon dioxide the wearer rebreathes. There are Acme canisters to protect against smokes, organic vapors, acid gases, carbon monoxide, ammonia, etc. Write for new bulletins describing this dependable "protection you can see through".

ACME PROTECTION EQUIPMENT CO.
3037 WEST LAKE STREET CHICAGO 12, ILLINOIS

When inquiring check CP 4543 on handy form, pgs. 2-3

Processing Equipment

Portable Fan Blows Hot or Cold Blast from Any Angle

20 and 24" types deliver 3000 or 4800 cfm, respectively; speed drying, cooling jobs

USES — Propeller-type utility fan for industrial uses. For equalizing temperature and humidity; for drying and cooling; adaptable to all processes requiring speed-



Industrial utility fan

up cooling by air-blast, or which require additional warm air.

For eliminating dampness by air-circulation.

For floor mounting without additional support, or for suspension at any location or angle.

FEATURES — Directs airflow in any desired direction. Portable. Operates in any position. Unusually sturdy.

DESCRIPTION — Totally enclosed, ball bearing-equipped motor. All-steel, die-stamped and die-formed blades. Equipped with safety guards, front and back, also extension cord and plug. 20" model delivers 3000 cfm; 24" model delivers 4,800 cfm.

Air-delivered ratings determined by Standard Test Code of Propeller Fan Manufacturers Association and American Society of Heating and Ventilating Engineers.

SOURCE — Model AA fans are a product of Chelsea Fan & Blower Company, Inc., Dept. CP, 1206 Grove St., Irvington, N. J. . . . or for more information, check CP 4544 on handy form, pages 2 and 3.

★

How To Get More Product Information

To make it convenient for readers to locate information in **CHEMICAL PROCESSING** Preview there is . . . on page 124 . . . a complete directory of all products that are featured in editorial articles or described in the advertisements in this issue; On page 126 you will find a list of the advertisers whose products are described in this issue; And to make it easy for you to secure additional information quickly there is a handy request slip inserted between pages 2 and 3.

MARCH, 1948

FIVE MANUFACTURERS PACK...

Limestone — Soap Powder — Soya Chemicals — Alcohol...CHEAPER AND BETTER

Factual Case Histories Show How Producers Save with St. Regis Packaging Systems.

If you pack a granular, pulverized, or powdered product, you can save money and increase packaging efficiency by installing a St. Regis Packaging System. These case histories reported to us by manufacturers of five different products are typical of the results gained with St. Regis Systems — consisting of valve bag filling machines and multiwall paper valve bags. Savings total as much as 80% compared with previous methods, with many other advantages as well.

St. Regis Packers and multiwall bags cut labor costs and container costs, help eliminate dust, and also increase hourly packaging output. Customers welcome the clean, compact protective multiwall bags wherever they are used—whether for rock products, fertilizers, feeds, foods, or chemicals.

Write today for free copies of any or all of these detailed case histories. A

St. Regis packaging engineer will be glad to discuss your specific packaging problems with you. For further information, call or write the nearest St. Regis office.



Case History No. 11—Limestone: 4-tube packer permits uninterrupted operation.



Case History No. 12—Soap Powder: One man operates 100-LS packer.



Case History No. 13—Soya Flour: Floor level conveyor handles packer output.



Case History No. 14—Chemicals: Multiwalls stack well in storage areas.



Case History No. 15—Alcohol: Multiwalls save 50% storage space.



MULTIWALL

ST. REGIS SALES CORPORATION
(Sales Subsidiary of St. Regis Paper Company)

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Mail this coupon for the complete story

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ST. REGIS SALES CORPORATION

Dept. CP, 230 Park Avenue, New York 17, N. Y.

Without obligation, please send me folders describing these case histories:

No. 11 ☐ No. 12 ☐ No. 13 ☐
No. 14 ☐ No. 15 ☐

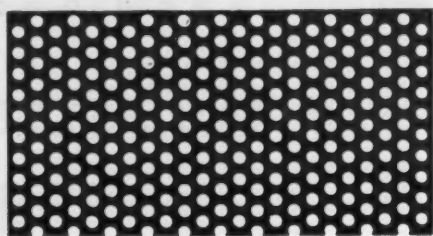
NAME _____

COMPANY _____

ADDRESS _____

When inquiring check CP 4545 on handy form, pgs. 2-3

PERFORATED METAL



for any screening requirement

However exacting may be your specifications for perforated metal screens for any processing operation, Hendrick can meet them.

In its standard line of perforated metal Hendrick furnishes 340 different sizes and spacings of round perforations, 137 of square, 902 of slot, and a large variety of hexagonal, "squa-round", and diamond perforations. Other styles and sizes made to specification. Write for full information.



Perforated Metals
Perforated Metal Screens
Architectural Grilles
Milco Open Steel Flooring,
"Shur-Site" Treads and
Armorgrids

HENDRICK
Manufacturing Company
32 DUNDAFF STREET, CARBONDALE, PA.
Sales Offices in Principal Cities

When inquiring check CP 4546 on handy form, pgs. 2-3

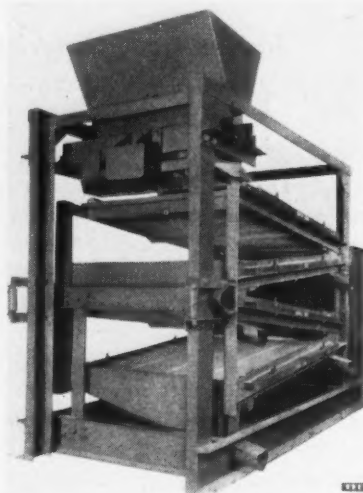
Processing Equipment

Grades Dry, Granular Materials Between 4 and 250 Mesh

*Standard 4 and 5-screen models, 4-screen lab
units handle clays, chemicals, etc.*

USES — Multi-form grader for handling dry, granular materials between 4 and 250 mesh, including chemicals, pigments, bauxite, silica sand, clays, steel grit and steel shot, salt, coke, abrasive grain, garnet, nepheline-syenite, feldspar, quartz, roofing granules, food products.

Originally built for manufacturer's own use in grading abrasive and refractory grain to exacting standards. Models also available for laboratory use. **FEATURES** — Assures uniformly even flow of materials,



Standard 4-deck multi-form grader

utilizing every square inch of screen surface. Produces fine grades quickly, with minimum fines remaining in coarser sizes. Compact, requiring minimum floor space. High accuracy. Use of cloth screens and mechanical vibrators eliminates plugging. Minimum noise and vibration. Easily dust-proofed. Flexible and adaptable. Requires no auxiliary splitting or correcting equipment.

Can be used singly or in combination, and supported on floor or from ceiling.

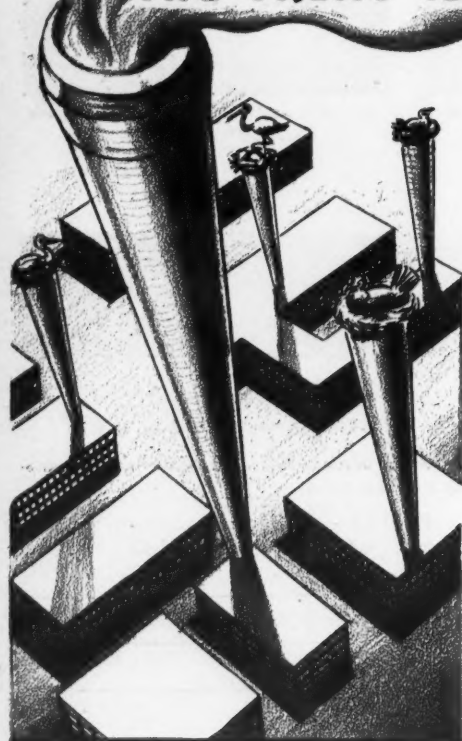
DESCRIPTION — Made in standard 4-deck, 5-deck and Junior 4-deck models. Standard 4-deck has 34 x 27 1/2" screening surface, with total screening area 26 sq. ft. All screens vibrate as a unit, screening action of each being identical with others.

Materials are fed from hopper to top screen. Oversize material is carried off through chutes at end of each screen, "unders" passing through screen into pan and thence through wide chute onto next finer screen. Standard equipment includes reciprocating drive and dust-proof drive motor, gravity feed hopper, belts, sheaves, etc., and 2 sets of screen frames. Electrically vibrated feed hopper and mechanical screen vibrators are optional.

If desired, two 4-deck graders, each with its own vibrating unit, can be mounted on same frame, driven by same 1 hp motor. Laboratory model produces 3 finished grades from run-of-mill, 4 from scalped head feed, at 200-300 lbs. per hr. Other combinations and special sizes are made for special requirements.

SOURCE — Manufactured by The Exolon Company, Dept. CP, 947 E. Niagara St., Tonawanda, N. Y. . . . or for more information check CP 4548 on handy form, pages 2 and 3.

THE TREND IS TOWARD CENTRAL HEATING!

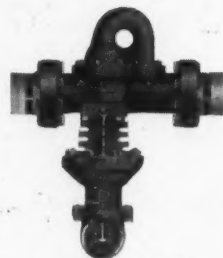


BUILDERS *Shuntflo*

Modern central heating plants not only reduce the smoke nuisance — they deliver ample steam at all times, economically, dependably. But with ample steam available at the turn of a valve, accurate metering of all distribution lines becomes a "must". Builders Shuntflo Meter is ideal for this service . . . it eliminates guesswork — shows exactly where and how much steam is being used. It provides accurate totals in pounds or cubic feet — meters steam consumed by individual departments, processes or buildings, over an unusually wide range of flow. The Shuntflo Meter is entirely self-contained, requires no electricity, has no clock to wind. It is installed in any line up to 12" as easily as a valve. For complete information and Bulletin 349, address Builders-Providence, Inc., (Division of Builders Iron Foundry), 47 Codding Street, Providence 1, Rhode Island.

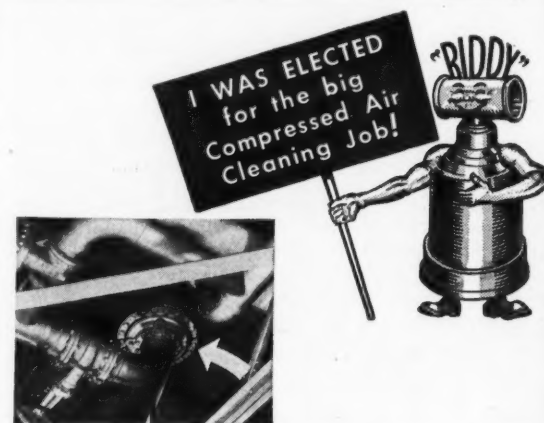
BUILDERS PRODUCTS

Venturi, Propello and Orifice Meters • Type M, Flo-Watch and Flo-Gage Instruments • Shuntflo Steam Meters • Kennison Nozzles • Chronoflo Telemeters • Conveyflo Meters



BUILDERS *PROVIDENCE*
Instruments

When inquiring check CP 4547 on handy form, pgs. 2-3



Yes sir, the compressed air reform party in any plant doesn't go for half-baked measures—that's why they pick Aridifier for a real clean-up job on oil, dirt, and water corruption in compressed air lines. Out goes contamination that shortens tool life, clogs orifices, ruins finishes.

The Aridifier shown is providing clean, dry compressed air for the large new Avon Lake plant of Fruehauf Trailer. It's installed in the 10-inch main air line just before the branch lines. No baffles, no filters, no constant cleaning—Aridifier uses the positive action of counter-rotating rotors to do the job. Send for Bulletin 147.

Logan Engineering Co.

4900 Lawrence Avenue, Chicago 30, Illinois

Logan ARIDIFIER
Dries and Cleans Compressed Air

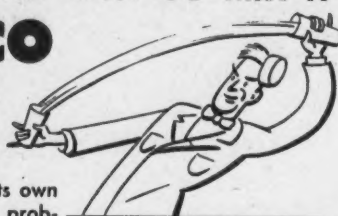


When inquiring check CP 4549 on handy form, pgs. 2-3

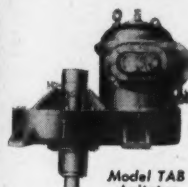
CHEMICAL PROCESSING Preview

THERE'S A RIGHT WAY TO MIX IT

NETTCO AGITATING EQUIPMENT



Every industry has its own particular agitating problems — and its unique mixing methods. NETTCO Agitators are engineered for specific jobs to operate at maximum efficiency — mixing a wide range of liquids or combinations of liquids and dry materials. In the last forty years, thousands of difficult blending and mixing problems in many industries have been successfully solved by NETTCO specialized agitating equipment. NETTCO standardized parts and units, designed to combine economically, provide highly specialized mixers at low cost to improve the efficiency of process operations. We regularly furnish agitators in ratios from 1 to 2,000 and speeds from ½ to 1750 R.P.M. to satisfy your particular requirements.



Model TAB
Agitator
Drive

Write for Catalog

NEW ENGLAND TANK & TOWER CO.

93 TILSTON ST., EVERETT 49, MASS.

When inquiring check CP 4550 on handy form, pgs. 2-3

UNFIRED PRESSURE VESSELS

constructed under A.S.M.E. Code,
Par. U-69, for many purposes



Welded "Standard Special" Oil Separator for 28" Vacuum

Materials and man-power are now available to devise and fabricate special applications of tank construction.

Many years of experience building A.S.M.E. inspected and approved vacuum and high pressure vessels have qualified our engineers to provide a satisfactory solution to many troublesome problems in this class of construction. All work fabricated by approved welders and produced under A.S.M.E. inspection.

Send Blue Prints or Specifications for Quotations on Your Requirements.



WRIGHT-AUSTIN COMPANY
318 West Woodbridge St. Detroit 26, Mich.

WRIGHT-AUSTIN
ESTABLISHED SINCE 1914

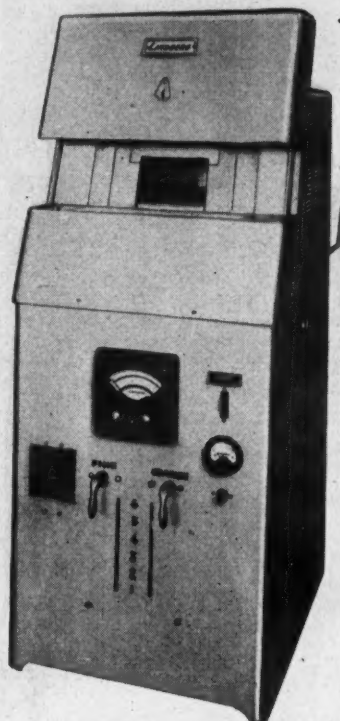
When inquiring check CP 4551 on handy form, pgs. 2-3

MARCH, 1948

Processing Equipment

Operate Lab Furnace Constantly at 2500° F.

3000° F. top capacity provides
heat quickly at lower levels



Box-type laboratory furnace

USES — Box-type laboratory furnace for continuous operation as high as 2500° F. Also may be used as muffle furnace, or with carbon blocks for non-oxidizing atmospheres.

FEATURES — Uniform, rapid heating. Self-contained.

DESCRIPTION — 3000° F. top heat capacity and 10 silicon carbide "Glowbar" heating elements. Furnace temperatures regulated by indicating-controlling pyrometer.

Model G-10, for operation on 230 volts, 60 cycle, single phase AC. Special voltages in AC made to order. Variable voltage transformer, contained within unit, has capacity of 8 KW, and is used in conjunction with the 2 tap switches.

SOURCE — Manufactured by Lindberg Engineering Company, Laboratory Furnace Division, Dept. CP, 2444 W. Hubbard St., Chicago 12, Ill. . . or for more information check CP 4552 on handy form, pages 2 and 3.



For Technical Information and Prices

Phone or Write Our Nearest Office

CARBIDE AND CARBON CHEMICALS CORPORATION

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UNIT OF UNION CARBIDE AND CARBON CORPORATION

30 EAST 42nd STREET NEW YORK 17, N. Y.

Distributed in Canada by:
Carbide and Carbon Chemicals, Limited, Toronto



When inquiring check CP 4553 on handy form, pgs. 2-3

If it's a mixing problem,
Alsop has the answer

For every liquid mixing job

For over 25 years, processing men have relied on the consistent high standard of Alsop "Hy-Speed" Mixers and Agitators and on the technical service of The Alsop Engineering Corporation to help solve their liquid handling problems.

Whether your problem is mixing, blending, suspending or dissolving, you can handle it simply and economically with an Alsop "Hy-Speed" Mixer. They are sturdily constructed and simple to keep clean. Equipped with our easy-to-mount, quickly adjustable clamp, they make any tank a mixing tank. Available in a wide range of horse-powers, propeller combinations and speeds.

Liquid filtration is our specialty too — send for bulletin No. 745 containing complete information. The Alsop Engineering Corporation 303 Alsop Square, Milldale, Connecticut.



ALSOP
ENGINEERING CORPORATION
Filters • Filter Discs • Sheets • Mixers • Agitators

When inquiring check CP 4554 on handy form, pgs. 2-3

when you buy **STAINLESS STEEL**
PROCESSING EQUIPMENT
*Get All the advantages
the alloy offers*

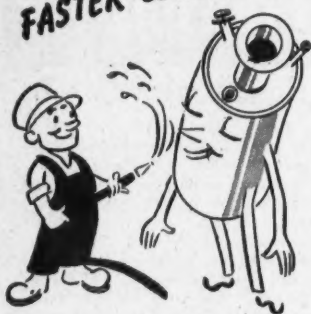
LONGER SERVICE



**LOWER
MAINTENANCE
COST**



FASTER CLEANING



**MAXIMUM
CORROSION
RESISTANCE**



It takes a specialist to transform stainless steel sheet into processing equipment that gives you the best out of the alloy. We work with stainless steel alloys exclusively. That means we're equipped to protect your investment in stainless steel processing equipment—know all the fabricating safeguards that give you the maximum benefits of the original alloy in your finished vessel. Consult with us on your requirements.

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S. BLICKMAN, INC.
Guards Alloys in Fabrication

CORROSION RESISTANT PROCESSING EQUIPMENT



SEND FOR THIS
VALUABLE BOOK
A request on your letter-
head will bring our
guide, "What to Look
for When You Specify
Stainless Steel for Your
Processing Equipment."



When inquiring check CP 4555 on handy form, pgs. 2-3

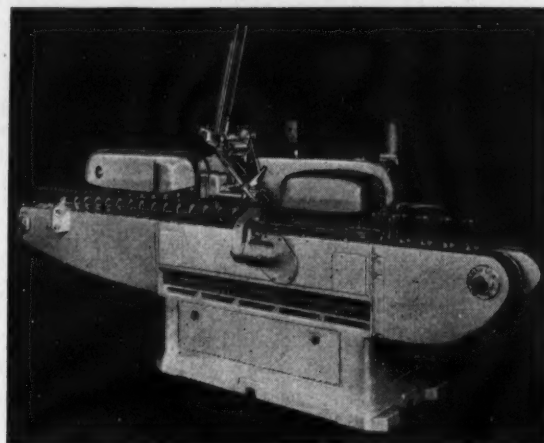
Processing Equipment

Superheated Steam Gives Desired Degree of Vacuum for Hot or Cold Packs

*Capping machine handles 75 to 250 jars per min.;
seals small head spaces*

USES — Automatic high-speed straight-line vacuum capper for applying "Anchorvac N" caps, from 27 to 90 mm, inclusive, on glass jars and bottles having pry-off ledge or shoulder pry-off finish.

For jars 3 to 8 1/2" high and 2 to 4 1/4" diam. Also for other sizes when used with special equipment. Can



Automatic high-speed vacuum capper employing superheated steam. Machine requires 20 lbs. of low pressure steam, uses 3 to 6 lbs. at nozzle

be used for sealing pre-labeled containers, and for successful steam-sealing of peanut butter, etc.

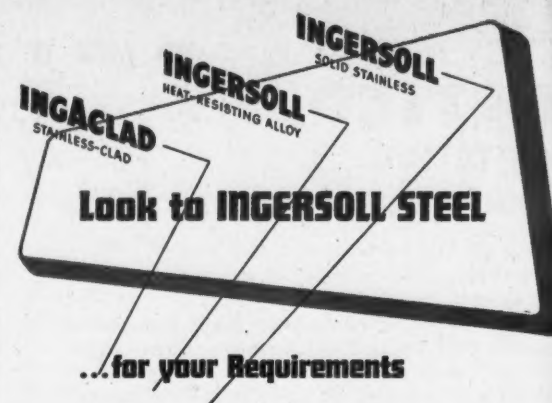
FEATURES — Handles all commercial speeds. Seals packages with extremely small headspace. Eliminates adjustments or maintenance of parts in concealed chamber or an atmosphere of live steam; package is in full view during entire operation.

Makes possible the steam-vacuum sealing of certain products not previously successfully sealed by these methods. Efficient vacuumizing, unaffected by drafts and air movements. Smooth, silent operation.

DESCRIPTION — Seals 75 to 250 or more containers per min., using dry, live, superheated steam. Steam is thus fully expanded, reducing condensation to minimum and providing maximum vacuum for volume of steam used. Superheated steam is injected into headspace of container as cap is automatically picked off end of feed chute. While headspace is saturated with steam, cap is applied. Vacuum created by condensation holds cap in place.

Seal is made at end of chute, the container then passing under a short auxiliary sealing belt to assure secure seating. Any desired degree of commercial vacuum on hot or cold packed products is obtained and held by simple adjustment of steam flow. Only actual manual labor is that of keeping cap-free magazine filled — a matter of removing nested caps from their cartons and dropping them into automatic cap feed. This feeds from bottom with rotary motion.

Effectively vacuumizes packages whose headspace is be-



You've got a problem involving steel. You're planning a new product... modernizing your plant... designing new equipment. You may need solid stainless... maybe stainless only on the exposed or contact side... maybe a special heat-resisting alloy.

Remember, Ingersoll produces not only solid stainless—but heat-resisting alloys and Ingaclad Stainless-Clad Steel as well.

Our recommendations are unbiased. Our advisory service is yours for the asking—without cost or obligation. Write, wire or phone.



INGERSOLL
STEEL DIVISION

BORG-WARNER CORPORATION, 310 S. Michigan Ave., Chicago 4, Ill.

PLANTS: Chicago, Ill. • New Castle, Ind. • Kalamazoo, Mich.

When inquiring check CP 4556 on handy form, pgs. 2-3

"SNAP-IN" LINERS... Longer Life for Metal Containers



**QUICKLY,
EASILY
APPLIED . . .**

"SNAP-IN" LINERS are readily dropped into place and securely held there by snapping the lid over the container rim. Lid (rubber lined) is then fastened down with adjustable fasteners, forming a leak-proof, rubber-to-rubber seal. Liner can be quickly removed at any time.

Contact Our Nearest Branch for Further Details and Prices.



GOODALL RUBBER CO., INC.

THE GOODALL-WHITEHEAD COMPANIES

Philadelphia • Trenton • New York • Boston • Pittsburgh • Chicago • St. Paul • Los Angeles
San Francisco • Seattle • Salt Lake City • Houston • Factory: Trenton, N. J. • Est. 1870

When inquiring check CP 4557 on handy form, pgs. 2-3

Processing Equipment

tween 2 and 12% of total jar volume. Vacuums are highly consistent with unvarying conditions, and are changed only slightly despite great variation in headspace. Machine requires 20 lbs. of low pressure steam, and uses only 3 to 6 lbs. at nozzle.

A vacuum visualizer provides visual proof of sealing, particularly on products that trap air. Use of superheated steam eliminates need for cooling water sprays to hold cap in place on hot-packed products. Head-spacer, sealing unit, cap feed and sealing belt are all adjusted for height at one time by adjusting wheel.

Diameter adjustments are made by removing 3 bolts, lifting off the star (one is provided for each diameter), and replacing correct-size star, with bolts. Same helioid feed can be used unless diameters vary greatly.

Headspacer is available where required. Standard machine is equipped with 4' 6" intake boom and 2' discharge boom. Conveyor lengths can be varied to suit needs, and synchronized hook-ups and drives are available for all standard filling machines.

SOURCE — Product of Anchor Hocking Glass Corporation, Dept. CP, Lancaster, O. . . or for more information check CP 4558 on handy form, pages 2 and 3.

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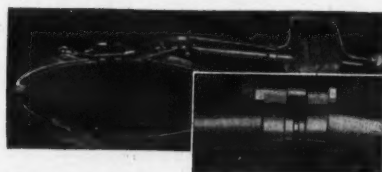
Improved Tools & Sealing Ring Speed-Up Closing of Drums

Drums using bolted type of ring for full removable head closed in 1/2 min.

USES — Provides quick, easy method of closing bolted type sealing rings.

FEATURES — No loose or moving parts — one solid ring sufficiently flexible for easy application. Time required by one man for complete cycle of operations to bolt the ring to the drum is less than one half-minute by actual timing.

DESCRIPTION — The method embraces an improvement in the ring itself and two improvements in the closing tool. The nut used in holding the ring in



Locking ring securely bolted with adjustable tool

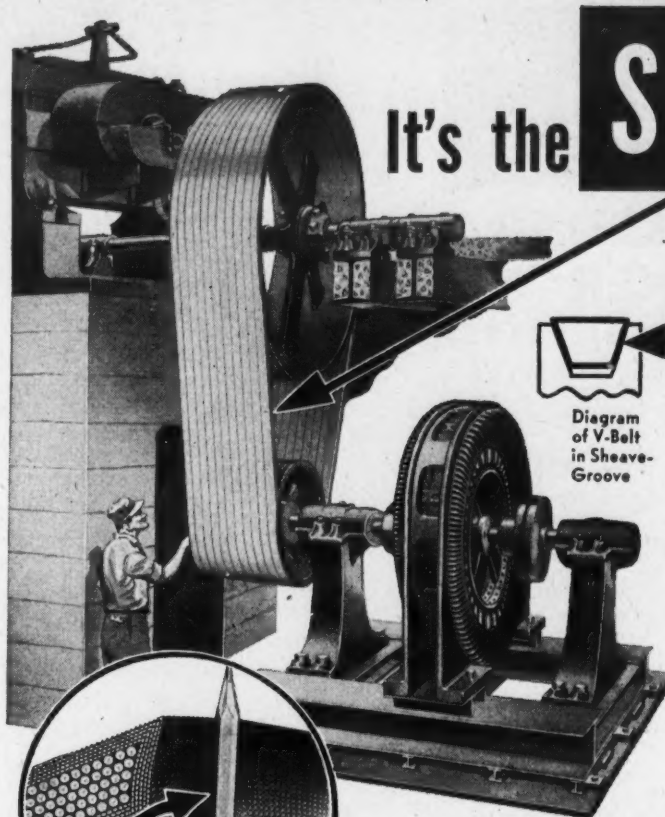
position is made an integral part of the lug which is welded to the ring. This places the nut in position for faster use.

The closing tool has a self-contained wrench which is ready for use when the bolt is inserted in the lugs on the ring. Also, there is a turnbuckle which permits quicker adjustment of the tool for variations in sizes of drums.

Available in three types to meet requirements of different curls, nuts, etc.

SOURCE — Drum Parts, Inc., Dept. CP, 10311 Meech Ave., Cleveland, Ohio . . . or for more information check CP 4559 on the handy form, pages 2 and 3.

MARCH, 1948



It's the SIDES of a V-Belt

that GRIP the Pulley
Pick-Up the LOAD
and Really Get the WEAR!

Every ounce of load a V-Belt carries must first be picked up by the sides of the belt. Clearly so, because only the sides come into contact with the pulley! The sides do all the GRIPPING on the pulley. The sides pick up the load. They transmit that load to the belt as a whole. And then, once more, the sides—and the sides alone—grip the driven pulley and deliver the power to it. Finally, the sides get ALL THE WEAR against the sheave-groove wall.

That is why you have always noticed that the sidewall of the ordinary V-Belt is the part that wears out first.

That's Why the Concave Side

(A GATES PATENT)

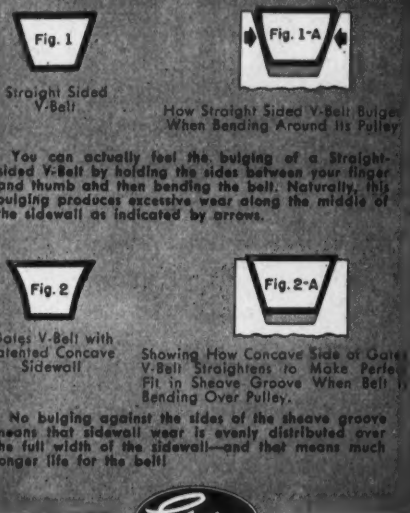
IS IMPORTANT TO YOU!

Clearly, since the sidewall is the part that wears out first, anything that prolongs the life of the sidewall will lengthen the life of the belt—and that's why the patented Concave Side is important to you.

The simple diagrams on the right show exactly why the ordinary, straight-sided V-Belt gets excessive wear along the middle of the sides. They show also why the Patented Concave Side greatly reduces sidewall wear in Gates Vulco Ropes. That is the simple reason why your Gates Vulco Ropes are giving you so much longer service than any straight-sided V-Belts can possibly give.

and the CONCAVE SIDE is more important NOW than ever before

Now that Gates SPECIALIZED Research has resulted in Super Vulco Ropes capable of carrying much heavier loads—fully 40% higher horsepower ratings—the sidewall of the belt is called upon to do even more work in transmitting these heavier loads to the pulley. Naturally, with heavier loading on the sidewall, the life-prolonging Concave Side is more important now than ever before!



The Mark of SPECIALIZED Research

GATES VULCO ROPE DRIVES

Engineering Offices and Jobber Stocks IN ALL INDUSTRIAL CENTERS of the U. S. and 71 Foreign Countries

THE GATES RUBBER COMPANY
"The World's Largest Makers of V-Belts"
DENVER, U. S. A.

When inquiring check CP 4560 on handy form, pgs. 2-3

**SAVES UP TO 75% MIXING TIME
GIVES MORE UNIFORM
DISPERSIONS AT LOWER COST**

ABBÉ-LENART MIXER

**COMPLETELY DISPERSES
GRINDS • EMULSIFIES**

In One Operation

USERS REPORT REAL RESULTS

- On paints, "We replaced a paste mixer and stone mill and now save 2c per gallon."
- On carbon black in liquid vehicle; replaced a dough mixer, "We mix in about half the time and save on labor and power."
- On ointments, "We tried various methods. Your machine, with vacuum for deairing during mixing, grinds and mixes in one operation; saves us about 40% in labor and half the time."
- On soaps, "The Lenart is three times faster than paddle mixers."

Get all the details on this unique, versatile production expeditor. Capacities — 1/2 to 330 gal.; built of any metal. Free test on your product. Get Catalog 62.

ABBÉ ENGINEERING CO.

46 Church St.

New York 7, N. Y.

When inquiring check CP 4561 on handy form, pgs. 2-3

HILCO OIL RECLAIMERS

**For Complete Removal of Solids, Moisture and Gases
From New and Used Lubricating and Sealing Oils.**

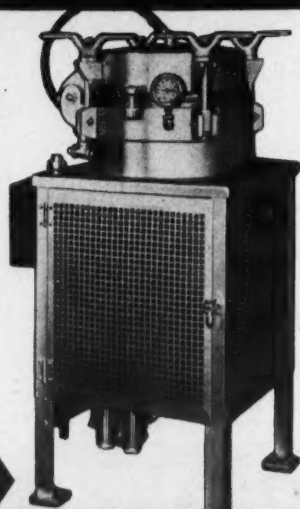
- For Vacuum Pumps
 - For Absolute Low Pressures
 - For Refrigeration Unit Charging
- Lasting Lubrication**

Save Money — Oil — Equipment

Complete HILCO Vacuum Pump Lube and Sealing Oil. Continuous Purifying System Plans Available

Let us show you how to deliver pure oil to refrigeration units with a HILCO charging system.

HILCO Oil Reclaimer
Model B-1



Write for
Free
Literature

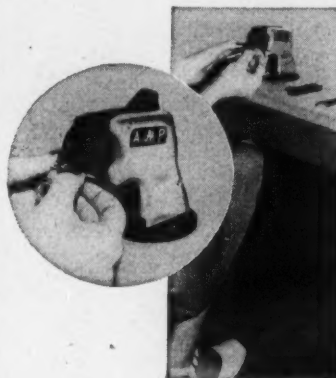
THE HILLIARD CORPORATION
207 W. Fourth St., Elmira, N. Y.

When inquiring check CP 4562 on handy form, pgs. 2-3

Processing Equipment

Wire Terminal Foot Press Installs Many AMP Types

*Solderless wiring device leaves hands free to
manipulate terminals and wire*



Wire terminal foot press

USES — Foot press for installing solderless wiring terminals. Applications include installation of AMP terminal types such as "Pre-Insulated" (insulation bonded to terminal); "Solistrand" (for both solid and stranded wire), and closed-end connectors and splicing terminals.

FEATURES — Leaves both hands free to manipulate

terminals and wire. Occupies minimum space. Sturdy, efficient and economical. Easily operated.

DESCRIPTION — Moderate pressure on treadle produces uniform, vibration-free crimp. Occupies 7 square inches of bench area. With aid of a screwdriver, wrench and 1/2" drill, it may be set up in a few minutes. Interchangeable crimping jaws permit installation of a wide selection of AMP terminal types.

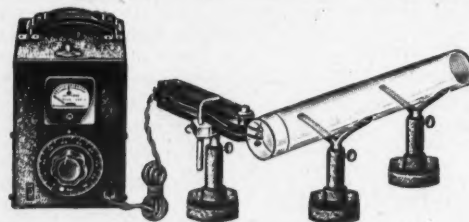
SOURCE — "Ampli-press" is a product of Aircraft-Marine Products Inc., Dept. CP, 1559 N. Fourth St., Harrisburg, Pa., . . . or for more information check CP 4563 on handy form, pages 2 and 3.

Mounted Hot Wire Tube-Cutter Demounts to Cut Apparatus

*Cuts glass tubing up to 7-1/2" OD, any position;
available with power-controlling foot pedal*

USES — For cutting glass and Pyrex-type tubing up to 7 1/2" OD in any position, as a separate piece or as an integral part of apparatus already set up.

FEATURES — Although using hot wire method, it eliminates possible electric shock and other uncertain-



Glass tubing cutter

ties of this method. Practical and easy to use, with rapid, uniform results.

DESCRIPTION — "Even Heat" Glass Tubing Cutter includes adjustable supports for hot wire cutting unit, also for tubing when individual pieces are cut. However, the cutting unit can be used in any position when

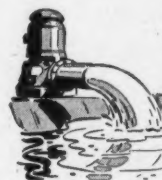
**For Your Next Job
STOP and CONSIDER the**

FLEXIBILITY

of the

Peerless Vertical Turbine Pump

1. AS A DEEP WELL PUMP



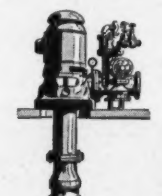
For a dependable source of clean water, Peerless Vertical Turbine Pumps are recognized leaders in the field; noted for their adaptability to widest pumping conditions. Install these deep well pumps with the type of drive most suitable to your application. Capacities from 15 to 30,000 g.p.m. are obtained from all practicable depths.

2. AS A CLOSE-COUPLED PUMP



You're assured of full turbine pump utility and capacities with an extremely compact installation. Ideal for pumping from short or medium settings; capacities up to 30,000 g.p.m. are delivered from sumps, pits and surface water sources. For booster service, circulating, de-watering and a host of other applications.

3. AS AN APPROVED FIRE PUMP



Install this versatile Peerless Vertical Turbine type Fire Pump, with proper fittings, for a permanent and reliable water supply for adequate plant fire protection. Underwriters approved, these pumps produce from 500 to 2000 g.p.m. against heads to 285 ft. Extremely simplified in piping arrangement.

Engineering Information Available on All Three Vertical Turbine Types

Write to nearest office stating what your pumping conditions are; give diameter and depth of well, distance to water, capacity desired, total head, type of lubrication (oil or water) and type of drive. The bulletin that specifically describes the pump to fit your specific needs, together with appropriate engineering data will be furnished. Plan with Peerless Vertical Turbine Pumps!



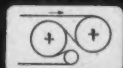
PEERLESS PUMP DIVISION

Food Machinery Corporation

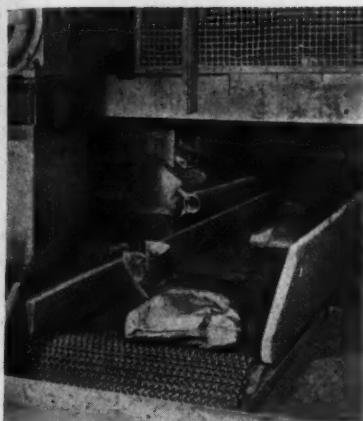
Factories: Los Angeles 31, Calif.; Quincy, Ill.; Indianapolis, Ind. District Offices: Chicago 40, 4554 North Broadway; New York 5, 37 Wall Street; Atlanta Office: Rutland Building, Decatur, Georgia; Dallas 1, Texas; Fresno, California; Los Angeles 31, California

When inquiring check CP 4564 on handy form, pgs. 2-3

**When Production
Depends on
Product Movement**



**You Can Depend
on a Cambridge
WIRE BELT**



Cement bags remain clean during movement on a Cambridge Balanced Belt because loose cement sifts through the mesh openings in the belt.

If your products or raw materials must move during processing, call in a Cambridge engineer to discuss the proper woven wire belt for your conveyor machines.

Let us show you how Cambridge Engineered belts are specially built for specific installations—specially built from any metal or alloy to any mesh or weave.

Or, for information on the entire Cambridge wire belt line, write for your **FREE** copy of this illustrated 130 page booklet.



There's a Cambridge Sales Engineering Office near you



**Cambridge
WIRE CLOTH CO.**

Department E • Cambridge 3, Maryland
BOSTON • NEW YORK • BALTIMORE
PITTSBURGH • DETROIT • CHICAGO
SAN FRANCISCO • ST. LOUIS

When inquiring check CP 4565 on handy form, pgs. 2-3

MARCH, 1948

Processing Equipment

detached from support, and a foot switch is available as an accessory for controlling power when operator needs both hands free for cutting.

Special power unit supplies power for the variable-length cutting wire, and a meter on this unit enables operator to balance electrical output with the variable wire length. Hot cutting wire carries low voltage which is isolated and insulated from power line.

When using with Pyrex-type glass, heat is applied approximately 30 seconds for each millimeter of wall thickness, after which heated area is thoroughly quenched with water. For soft glass, heat is applied until break occurs.

SOURCE — Product of Eberbach & Son Company, Dept. CP, Ann Arbor, Mich., . . . or for more information check CP 4566 on handy form, pages 2 and 3.

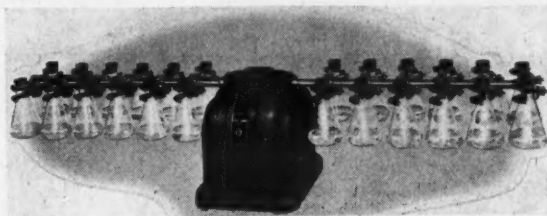
Duplicates Gentle, Violent Hand-Shaking of Flasks, Tubes, etc.

"Wrist-Action" shaker holds 8, 12 or 16 bottles; special models hold more or less

USES — Mechanical "Wrist-action" shaker for shaking any size volumetric flask, standard round bottles up to 4 ozs., erlenmeyer flasks up to 2000 ml., also Squibb separatory funnels up to 1000 ml, short neck, flat or round bottom flasks up to 2000 ml, and test tubes up to 50 mm. diameter. For use in all types of laboratories. For duplicating various shaking procedures.

FEATURES — Action duplicates the whirling splash typical of bottle-contents when shaken by hand. Speed of oscillation may be varied to suit requirements, from gentle to violent. Assures uniform action. Eliminates need for balanced loading of machine.

DESCRIPTION — Special "Finger-Grip" clamps of corrosion-resistant aluminum open and close by means of screw and spring-latch. Furnished in 8, 12 and 16-flask capacities, also in special models. Special unit illustrated shakes 24 flasks in unison. An adjustable



"Wrist-Action" shaker

knob controls degree of shaking, and full torque constant speed motor is applied to oscillating mechanism regardless of knob-position or degree of agitation. Scale is graduated from 0 to 100.

Flasks or other receptacles may be placed on one side of machine only, if desired. Drive mechanism and motor are enclosed in heavy housing which rests on a rubber pad, holding machine stationary. Finger-Grip clamps are mounted on a chrome-plated shaft. Unit operates by means of cord and plug on 115 volt, 60-cycle current, unless specified otherwise. Bulletin 207.

SOURCE — Made by Burrell Technical Supply Company, Dept. CP, 1942 Fifth Ave., Pittsburgh 19, Pa. . . . or for more information check CP 4567 on handy form, pages 2 and 3.

TAKES BACK BREAKING LABOR OUT OF FILTER PRESS OPERATION

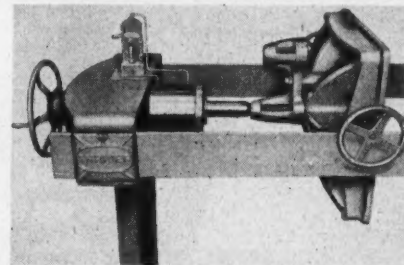
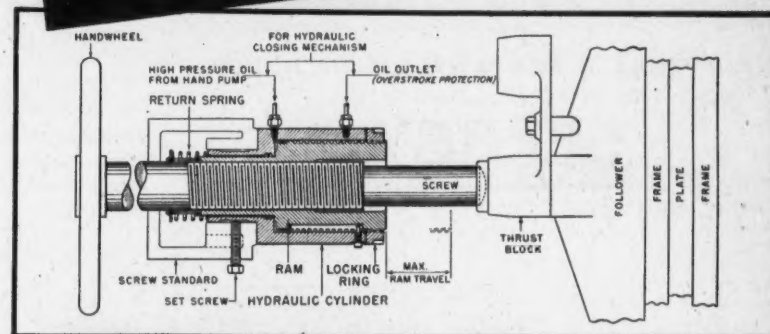
New!

SHRIVER

HYDRO-KLOSER*

**A REALLY
SIMPLE • SPEEDY
HYDRAULIC
CLOSER**

**Readily Installed
without Alterations
on Old or New Shriver
Filter Presses of
24" Plate Size & Larger**



Now you can equip your 24", 30" or 36" Shriver Filter Presses with this simple, easy to install hydraulic closer. It eliminates the back breaking labor and safety hazards of manual closing, and also cuts down time required for closing and opening the filter press.

The completely self-contained Hydro-Kloser fits the Shriver screw standard, replacing the thrust obtained by the manual movement of the screw with the straight thrust of the hydraulic ram. A few easy strokes of the hand pump close the filter press tight to required gauge pressure. A locking nut turned back on the ram keeps it tight. To

open the press, the locking nut is released and hydraulic pressure is then released by opening the pump valve.

The Hydro-Kloser is practically fool-proof. Its ram is equipped with an over-stroke release and cannot be pumped out of its casing.

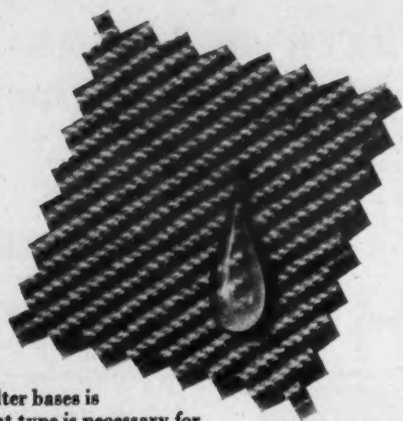
Write for details on this aid to production convenience and economy.

T. SHRIVER & COMPANY, Inc.

846 HAMILTON STREET · HARRISON, N. J.

When inquiring check CP 4568 on handy form, pgs. 2-3

the right filter base



■ Choice in filter bases is important. The right type is necessary for efficient, low-cost filtration. Let Sperry recommend it for you. We've had more than 50 years filtration experience. And we have a complete stock of bases—covering a wide range of industrial applications.

Sperry engineers have developed bases in paper, cloth, vinyon, asbestos, rubber, glass and woven materials. If a special type is indicated, Sperry can supply that.

Whatever your filtration problem, call in Sperry today for an accurate analysis. Chances are you'll increase production efficiency. There's no obligation.

D. R. SPERRY & COMPANY, BATAVIA, ILLINOIS

Filtration Engineers for Over 50 Years

**SPERRY
FILTER BASES**

When inquiring check CP 4569 on handy form, pgs. 2-3

Processing Equipment

Flexible Shaft Has 66-Piece Kit, Pencil-Like Aluminum Handpiece

Foot-operated rheostat provides wide range of speeds for drilling, grinding, etc.

USES — Flexible shaft tool kit for routing, drilling, sawing, engraving, buffing, grinding, etc. For use where a wide range of speeds are required.

FEATURES — Lightweight handpiece operates like writing with a pencil. Speed is controlled with foot, leaving hands free. Quickly, simply changed to desired speed. Portable and easy to carry. Small diameter permits reaching inaccessible points.

DESCRIPTION — Contains an assortment of 66 useful tools, packed in an attractive wooden cabinet. Foot-mounted wheels, and will accommodate drills and special tools from 1/8 to .028" diameter.



Flexible shaft tool kit

Handpiece is equipped with precision ball bearing at chuck end. 1/16 hp motor, 6000 rpm full load, 13,000 rpm no load, 110 volts AC or DC.

SOURCE — Product of Flex-O-Shaft Sales Company, Dept. CP, Prairie View, Ill. . . or for more information check CP 4571 on handy form, pages 2 and 3.

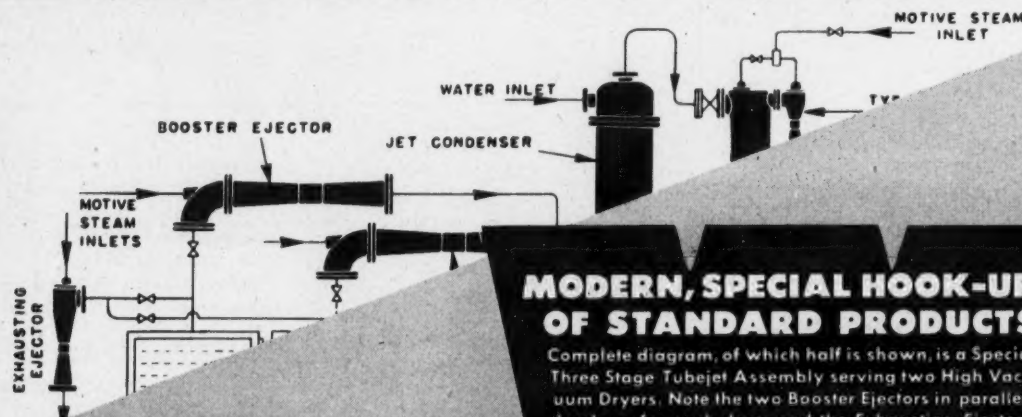
1/4 to 2" Diam. Bits Drill Tile, Concrete, Brick or Marble

Fit all standard automatics; require less pressure; can be used to anchor machines, etc.

USES — Rotary drill bits for boring holes in concrete, tile, brick or marble. For use with any standard automatic drill in anchoring machinery, hanging signs, installing pipe; electrical, heating, air conditioning work.

FEATURES — Arrangement of cutters makes for easy starting, easy use, and requires about half the ordinary pressure, manufacturer reports. Fast-drilling, cleaning holes as they drill. Designed to permit use of extreme pressures necessary to cut through hard rock. Bit is not deflected by rock nor injured by heat. Quiet, speedy and precise. Wear and breakage reduced to minimum.

DESCRIPTION — Diamond-dressed cutting tips are set in blunt end of bits at correct angle for highest efficiency. Drill bit sizes range from 1/4 to 2" diam. Bits 3/4" and larger have 4 cutters at proper cutting angle in outside rim. In addition to outside spiral, the



HALF OF ONE OF THE DOZEN similar flow diagrams in Catalog 1462. Why only half? If it were reduced to a size to fit this space, either it would be too small to do any good or so big, there wouldn't be room for anything else. Complete diagram appears in the Catalog.

MODERN, SPECIAL HOOK-UPS OF STANDARD PRODUCTS

Complete diagram, of which half is shown, is a Special Three Stage Tubejet Assembly serving two High Vacuum Dryers. Note the two Booster Ejectors in parallel hook-up for each dryer and the Exhausting Ejector for rapid, initial evacuation. Also note the Direct Contact Jet Condenser and the Two Stage Type 2J Ejector with Inter-condenser. . . . Catalog 1462 illustrates and describes Single, Two, Three, Four and Five Stage Ejectors, the latter for maintaining absolute pressures below 250 microns.

C. H. WHEELER MFG. CO.

1810 Sedgley Avenue, Philadelphia 32, Pa.
REPRESENTATIVES IN MOST PRINCIPAL CITIES

C.H. Wheeler

STEAM CONDENSERS • AIR EJECTORS
COOLING TOWERS • HEAT EXCHANGERS
OF PHILADELPHIA

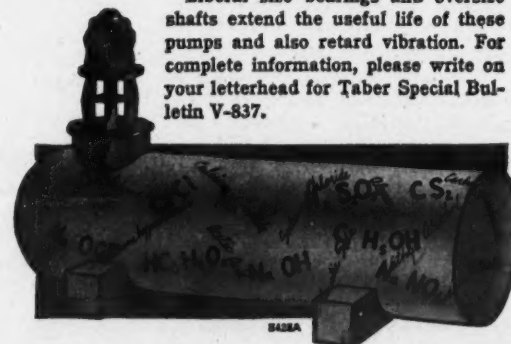
When inquiring check CP 4570 on handy form, pgs. 2-3

MORE OPERATING HOURS with TABER VERTICAL PUMPS

Oleum, concentrated sulphuric, mixed acids and similar liquids, are well within the handling range of Taber Vertical Pumps.

By locating the stuffing box away from fluid being handled, repacking interruptions are reduced to an inconsiderable minimum . . . thus more operating hours with Taber Vertical Pumps.

Liberal size bearings and oversize shafts extend the useful life of these pumps and also retard vibration. For complete information, please write on your letterhead for Taber Special Bulletin V-837.



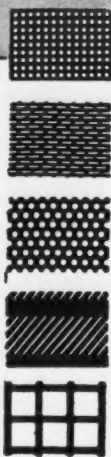
TABER PUMP CO. • Est. 1859 • 320 ELM ST., BUFFALO 3, N. Y.

Taber Pumps for Higher Practical Performance

When inquiring check CP 4572 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

Perforated Metals



REMEMBER—for screening, guarding, ventilating, etc., **Perforated Metals** are stronger, dependably accurate longer and insure long-range economy.

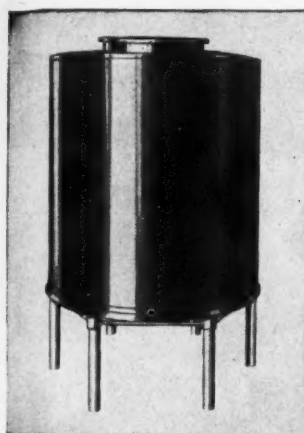
REMEMBER also—that H & K offers you 65 years accumulated experience in precision perforating of metals, as well as plywoods, plastics, fabrikoids and other materials. H & K, too, offers you a wide selection of sizes, shapes and spacings. Send your specifications NOW for complete information.

Don't Forget—H&K "Make Your Own" Safety Guards . . . strong, safe, inexpensive. Ask about them!

The Harrington & King PERFORATING CO.

5636 Fillmore St., Chicago 44, Ill. • 114 Liberty St., New York 6, N. Y.

When inquiring check CP 4573 on handy form, pgs. 2-3



Write for Catalog

STAINLESS STEEL PROCESSING AND STORAGE VESSELS

We build them in many capacities, and styles for standard or special uses.

All seams are welded inside and out. Welds are ground perfectly smooth and polished. Easy to clean and keep sanitary. Bottoms on most styles are designed to be self-draining. Highest quality finish and workmanship.

Mixing units, flush valves, faucets, and other fittings required for your individual requirements, are readily adaptable.

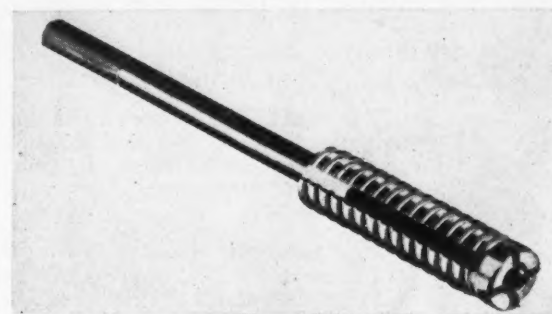
Let us figure on your next requirements. Write Dept. B.

PFAHLER - CLELAND CO.
STAINLESS STEEL TANK SPECIALISTS
GALION, OHIO

When inquiring check CP 4574 on handy form, pgs. 2-3

Processing Equipment

hollow shaft has a slot running full length of guide-end to permit small core and other cuttings to clear both



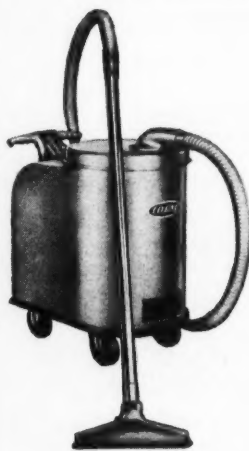
Rotary concrete drill

from the inside and out. Bits smaller than $\frac{3}{4}$ " have 3 cutters.

SOURCE — A development of Rotary Concrete Drill Company, Dept. CP, 650 Arroyo Parkway, Pasadena 2, Calif. . . . or for more information, check CP 4575 on handy form, pages 2 and 3.

Vacuums Bins, Overhead Pipes, Floors; Picks Up Soapy Water

Tank-type cleaner manipulates narrow aisles; features enclosed dust bag and air filters



Tank-type cleaner

USES — Industrial vacuum cleaner for general plant cleaning, dust-collecting and water pick-up. Removes fine dust from floors, dust from shelves and bins, cleans overhead steam, warm air and water pipes. Picks up soapy water from floors just scrubbed, etc.

FEATURES — Easily manipulates narrow aisles, narrow spaces between machines, etc., yet moves easily over uneven surfaces without danger of upsetting. Long primary cord affords 2700 sq. ft. of coverage from a single electrical outlet. Rugged and easy to operate.

DESCRIPTION — "Tank-type" unit with four large 5" diam. wheels, low center of gravity and swivel hose connection permitting machine to follow where operator leads. Motor-unit is mounted at base. Swiveled front wheels. Enclosed air filters and self-contained filtering system eliminates external bag. 1-1/3 hp continuous-duty motor. 30' primary cord. 16-gauge steel construction with smooth, Hammerloid finish.

Incoming air whirls around within tank, depositing heavy particles, then passing through cloth bag dust-removal filter. Dirt is emptied by raising vacuum-sealed lid and lifting out 9-gal. tank and dust bag.

SOURCE — Manufactured by Ideal Industries, Inc., Dept. CP, 5073 Park Ave., Sycamore, Ill., . . . or for more information check CP 4576 on handy form, pages 2 and 3.

SLY PIONEERS AND LEADERS IN Dust Control



Get ALL the Dust EVEN THE VERY FINE DUST

A cyclone and a Sly Dust Collector collect dust from grinding and sandblast operations on non-ferrous castings.

It is the fine dust which does the damage. The fine dust works its way into the bearings and other moving parts of machinery and settles widely over plant and neighborhood. Only the very fine particles enter the respiratory system of the human body.

A combination of a Sly Dust Collector and a cyclone Collector is not uncommon. The cyclone does not collect the fine dust. A Sly is added to get it all—by filtering the dust-laden air through cloth.

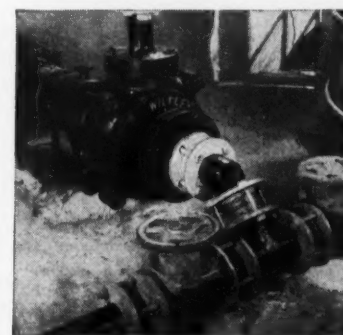
Ask for Bulletin 98 and tell us your problem so that we can write you fully.

THE W. W. SLY MFG. CO.

4754 Train Avenue • Cleveland 2, Ohio

Representatives in New York • Chicago • Philadelphia • Detroit • Cincinnati • Rochester • St. Louis • Toronto • Los Angeles • Birmingham • Minneapolis

When inquiring check CP 4577 on handy form, pgs. 2-3



Avoid costly shutdowns due to corrosion

Specify HAVEG Equipment for

HAVEG is a molded structural material that is completely acid and alkali resistant throughout its entire mass . . . it is not a lining nor a coating!

Large size equipment can be molded at low cost in one piece without seams or joints and installation accomplished easily and economically.

Send for Bulletin F-5 for complete design, engineering and application data.

CORROSION RESISTANCE THAT'S MORE THAN SKIN DEEP

- Agitators
- Baskets
- Blowers
- Fume Duct
- Filters
- Kettles
- Piping
- Pumps
- Tanks
- Towers
- Many Others

HA-6-47

HAVEG CORPORATION

NEWARK 7, DELAWARE

FACTORY - MARSHALLTON, DELAWARE



CLEVELAND 14 CHICAGO 11 HOUSTON 6 DETROIT 11 LOS ANGELES 13

830 Leaden Building, 1101 Robinson Bldg, Concession Bldg, 2815 Grand Blvd, 4111 W. 10th St.

When inquiring check CP 4578 on handy form, pgs. 2-3

Engineered FOR YOUR PARTICULAR JOB

"Precision" offers you the most extensive variety of Standard and Special Kjeldahl equipment, to fit your individual needs...backed by specialized Kjeldahl Engineers, with years of experience.

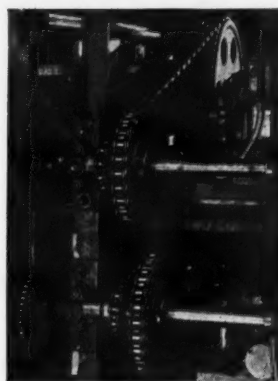
Whether your problem is limitation of space or limitation of budget, regardless of whether your needs demand a roomful of Kjeldahl equipment or just a portable twin unit, "Precision" can furnish exactly the equipment you need. Whether you want gas heat entirely or electric heat entirely, or Distillation gas heated and Digestion electric heated...there are many standard models that will give you exactly the type of heat you want!

Write for detailed Kjeldahl
Bulletin 515-D.

See Your Laboratory Supply Dealer

Precision Scientific Company

When inquiring check CP 4579 on handy form, pgs. 2-3



DIAMOND ROLLER CHAINS

Diamond Roller Chains provide flexible means for shaft to shaft drives — and high efficiency for the main motor drives.

In all kinds of manufacturing plants, improvements can be made in the handling and conveying of parts and products. For the driving of such equipment as well as on machinery for cleaning, washing, bottling, canning, and packaging, there is no substitute for Diamond Roller Chain Drives... They do not slip or creep, — are not affected by moisture, — retain efficiency of practically 100 per cent, — and operate equally well on short or long centers.

Catalog 617 sent upon request.

DIAMOND CHAIN COMPANY, Inc.

Dept. 411, 402 Kentucky Ave., Indianapolis 7, Indiana
Offices and Distributors in All Principal Cities

When inquiring check CP 4580 on handy form, pgs. 2-3

Processing Equipment

Dial Thermometer Adjusts to any Position Within 360°

Available in eleven standard scales, with an accuracy of 1% of the total range



"Easy Setting" dial thermometer

USES — Thermometer is suitable for temperature measurements in the range of 100 to 850° F. or Centigrade equivalent.

FEATURES — Adjustment of both dial and pointer to any point within a full 360° may be made from the front while the instrument is in service. This is particularly valuable in applications wherein the instrument is to be read from an unusual angle. No tools other than a

small Allen wrench and an ordinary screwdriver are required.

DESCRIPTION — Four-inch dial of the bimetallic-actuated thermometer is available in eleven standard scales, covering a total range of minus 100 to plus 850° F. or Centigrade equivalent, with an accuracy of 1% of range at any point of indication. Thermometers are supplied with stainless steel stems in four standard lengths, 4", 6", 9", 12". Separable sockets for these stem lengths can be furnished in standard models.

Case is supplied with either a moisture and fume proof frame (assembled with socket-head screws) or a quick opening threaded frame that may be readily unscrewed with the fingers.

SOURCE — Instrument is manufactured by Precision Thermometer & Instrument Company, Dept. CP, 1443 Brandywine St., Philadelphia 30, Pa. . . or for more information check CP 4581 on the handy form, pages 2 and 3.

★ Lightweight Safety Goggle Fits Over Eyes or Spectacles

One-piece acetate lens, acetate-enclosed metal temples, give frontal shield from flying chips

USES — Safety goggle for wear directly over spectacles or eyes for frontal protection against flying particles.

For laboratory work, bottling and hand-tool operations, spot welding and light grinding, chipping and riveting, machine work of various kinds.

FEATURES — Combines unobstructed side vision and good frontal protection with smart appearance. No metal touches skin. Lightweight and comfortable.

DESCRIPTION — Consists of single plastic acetate lens, green or white color, mounted in durable, brown plastic frame. Metal temples, enclosed in acetate to prevent corrosion, are easily adjusted, holding goggles snugly without irritation.

Replaceable 1-piece lens conforms to high safety standards. Each AO 607 safety goggle is furnished with leatherette case.

SOURCE — Product of American Optical Company, Dept. CP, Southbridge, Mass. . . or for more information check CP 4582 on handy form, pages 2 and 3.

SPEED STRAPPING with SIGNODE Reels!



SIGNODE REELS prevent bunching and kinking. They keep strapping off the floor. With strap flowing freely and evenly from the reel, the operator is able to strap more units per hour.

There is a Signode Reel to meet every condition — for use on floors, overhead, and under benches. Shown here is Model 9B — popular portable unit with tray for tools. Makes strapping operations possible anywhere in your plant.

For the full story of the efficiency and economy of

Signode Reels, write for Catalog No. 11.

There are Signode tools and strap sizes for protecting every type of shipment . . . packages, cartons, boxes, bundles, crates, skids . . . and car loading.

SIGNODE

STEEL STRAPPING COMPANY
2658 N. Western Avenue
Chicago 47, Ill.

When inquiring check CP 4583 on handy form, pgs. 2-3

PROMPT DELIVERY

HERCULES Aero

(RUBBER CUSHIONED)

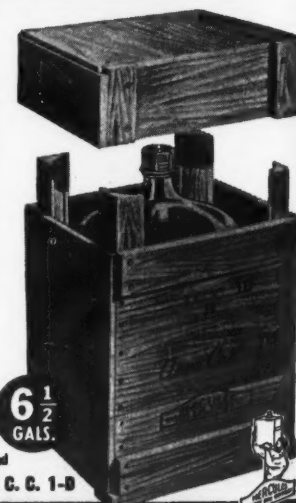
CARBOY BOXES

Specifications:

BOX SIZE:
13 1/4" x 13 1/4" x 22"
Including Hood (I.D.)

WEIGHT:
App. 26 lbs. (Box)
App. 14 lbs. (Bottle)

CARBOY:
6 1/2 Gals. capacity
(7 Gals. overflow)



Regulation Polystyrene CAP supplied
Complies with Classification I. C. C. 1-B

NATIONAL BOX & LUMBER COMPANY

HOME OF HERCULES CARBOY BOXES • NEWARK 5, N. J.

When inquiring check CP 4584 on handy form, pgs. 2-3

A Better Way

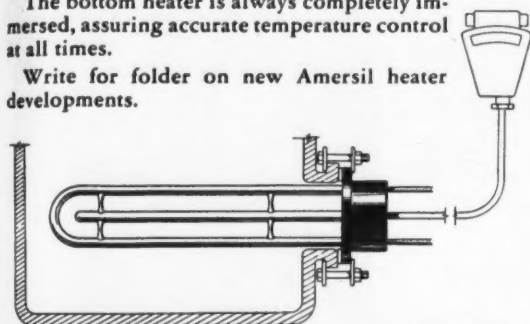
TO PROVIDE BOTTOM HEATING

BY EQUIPPING the new Amersil* opaque fused quartz electric heater with a special high temperature acid-proof resilient head, to effect a liquid-tight connection, the heating element may be located at the bottom of a vessel or tank.

This is particularly important where the level of the liquid varies, as it eliminates the danger of the exposed portion of the vertical heater causing undesirable high temperatures above the surface of the liquid.

The bottom heater is always completely immersed, assuring accurate temperature control at all times.

Write for folder on new Amersil heater developments.

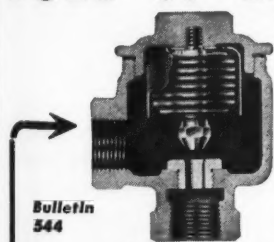


* Trade Name Registered

AMERSIL COMPANY Inc.
CHESTNUT AVENUE ENGELHARD HILLSIDE 5, N. J.

When inquiring check CP 4585 on handy form, pgs. 2-3

How to Keep Equipment FULL of Live Steam



Bulletin 544

Prompt and full drainage of condensate and venting of air and non-condensable gases are among the most important factors in maintaining maximum heat in kettles, coils, etc. Two reasons why Nicholson thermostatic steam traps prove superior in test after test: (1) operate on

lowest temperature differential, 5° to 15°, depending on trap size and steam pressure. (2) 2 to 6 times average drainage capacity. We'll gladly send one for testing.

5 TYPES FOR EVERY APPLICATION—process, heat, power; size 1/4" to 2" pressure, to 225 lbs. Bull. 544 or see Sweet's.

W. H. Nicholson & Co. 181 OREGON STREET WILKES-BARRE, PA.
Valves ★ Traps ★ Steam Specialties

When inquiring check CP 4586 on handy form, pgs. 2-3

Processing Equipment

Portable Welder Has Unique Transformer

Arc is reestablished promptly at points of zero current



Portable AC welder with easy setting handwheel

USES — For general plant service where portable A-C welding equipment is required. Also for applications where it is desired to save space in production shops the same basic apparatus is installed by stationary mounting to overhead beams. In such case the control wheel is mounted at bottom for ready adjustment.

FEATURES — Unusual compactness is due to the fact that the movable core on all models travels less than one inch to cover the entire range of stepless amperage control. The arrangement of dual primary and secondary coils and the elimination of arc boosters, reactor coils and fans also contributes to compact design. The absence of rotary parts results in quiet operation and virtually eliminates the need for lubrication and maintenance. Patented electrical and magnetic circuits result in an instant starting, smooth and stable arc at all amperage settings.

DESCRIPTION — The three industrial models offered are: 200, 300 and 400 amperes. All are NEMA rated. Cast-aluminum handwheel sets amperage as desired.

SOURCE — J. A. Kern Co., Dept. CP, 224 (19) North Loomis St., Chicago 7, Ill. . . or for more information check CP 4587 on handy form, pages 2 and 3.

For High Capacity

Trentweld
Large Diameter
STAINLESS STEEL TUBE
keeps your costs in line
by the foot
by the year
by the dollar

IF you have an interest in holding what cost you can to near or below pre-war levels, then Trentweld engineers have facts and figures you will find worth checking against your particular problem. For example, the pictures above show only a few of the hundreds of tubes rolled for the new Champion Paper Mill at Houston, Texas. This tube is type 304 stainless, with a wall thickness of 0.078. Diameter is 10 in. and 12 in. I.D., tube lengths 8 ft. and 12 ft. These specifications assure Champion of process lines with a future free from troublesome maintenance expense.

Trentweld tube ranges in size from 1/8" to 30", is available in wall thicknesses from about 0.002 to about 3/16". It may be rolled from many types of stainless steel or Inconel—whatever best meets the needs of the application. Without obligation address Dept. 22 or send for the Trentweld data bulletin.

General Office and Mill at
East Troy, Wisconsin

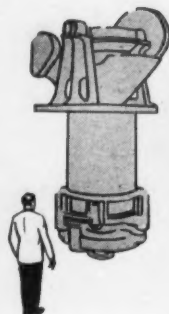
TRENT TUBE MFG. CO.

District Offices
New York and Chicago

When inquiring check CP 4588 on handy form, pgs. 2-3

JACKSON & CHURCH COMPANY'S

NEW
and
IMPROVED



**ZENITH
PULP PRESS**
WITH THE
HYDRAULICALLY ACTIVATED
FLOATING CONE



JACKSON & CHURCH COMPANY'S
ZENITH PRESS offers GREATER efficiency
... GREATER profits ... with the hydraulically-operated cake discharge port or "floating cone."

Long the finest dewaterer on the market, Zenith's new 100% automatic continuous operation assures CONSTANT, UNIFORM discharge pressures at any predetermined degree by finger-tip control. Cake Uniformity assured.

With new Zenith you'll notice decreased maintenance costs and minimum power consumption as compared to fixed-opening equipment.

These J & C engineering triumphs ... found only in Zenith Press ... are available to paper pulp manufacturers, canneries, corn starch plants, fish reduction plants, meat packers, glue plants, and citrus and waste drying plants.

For engineering or additional data write Jackson & Church Company at Saginaw, Michigan.

A PRODUCT OF

JACKSON & CHURCH COMPANY, SAGINAW, MICHIGAN

WORK WELL DONE SINCE '81

When inquiring check CP 4589 on handy form, pgs. 2-3

Make Flow Control Easier in Plant or Process



Rockwell "Kwikleen"
Slide Valve for low pressure
fluids or gases containing
solids, or for free-flowing granular
materials. Not necessary to remove a "Kwikleen"
from pipe line for cleaning.

Rockwell Butterfly
Valve with Automatic
Air Diaphragm Control
for proportioning or
quick opening or closing.
Available for all
manual controls, electric,
solenoid or hydraulic controls.



TYPES

Standard slide valves — threaded or flanged pipe — sizes 1" to 20"; "Kwikleen" Valves — flanged pipe — 4" to 16".

Butterfly Valves — threaded — sizes 1" to 4"; flanged — 4" to 72".

CONTROLS

For Slide Valves — hand, lever, hand wheel and chain wheel controls; for Butterfly Valves — manual types: lever, hand chain wheel or chain lever; automatic or remote: electric

motor, air or hydraulic cylinder, air diaphragm or solenoid.

MATERIALS

Made of cast iron, steel or stainless steel, Meehanite, nickel alloys, bronze, brass, aluminum; rubber or plastic-lined metal.

APPLICATIONS

Air for combustion, clean or dirty air or gases, chemical fluids, paper pulp, flue gases, fly ash, steam or water, etc.

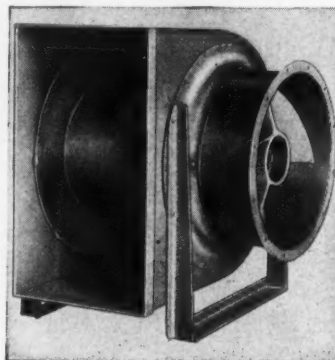
Write for New Valve Catalog
W. S. ROCKWELL COMPANY
220 Elliot Street • Fairfield, Conn.

When inquiring check CP 4590 on handy form, pgs. 2-3

Processing Equipment

Straight-Through or Convertible Elbow Fans Use Axial Flow

18 to 72" sizes have 0 to 3" static pressures,
2000 to 115,000 cfm; useful for cooling, etc.



Axiflo 2AE fan with 3-bladed aluminum alloy wheel

USES — Axial flow pressure fans for air conditioning, fume and dust removal, machinery cooling, mechanical draft for combustion, industrial drying and processing. For either vertical or horizontal operation.

Made in two basic types; manufacturer recommends convertible elbow type for high temperature service.

FEATURES — Perform effectively against resistance of wind and duct systems. Compact and sturdy, with high efficiency, straight air flow and simplified mounting.

DESCRIPTION — Basic types include straight-through and convertible elbow, both furnished with either 3-bladed aluminum alloy wheel or 8-bladed steel wheel. Convertible elbow type has motor, belt and bearings located outside air stream, readily accessible for inspection and maintenance.

Sizes from 18 to 72", static pressures from 0 to 3", and displacement from 2000 to 115,000 cfm. Characteristics include high mechanical and static efficiency combined with large volumetric capacity.

SOURCE — Product described is manufactured by Westinghouse Electric Corporation, Sturtevant Division, Dept. CP, Hyde Park, Mass. . . . or for more information check CP 4591 on handy form, pages 2 and 3.

★

Time-Saver Boring Head Does Rough, Semi and Finish Jobs

*Indexed eccentric arbor eliminates need for
changing cutter bits*

USES — "Kwik-Size" boring tool for rough, semi-finish and finish boring without changing cutter bits. For use on runs of boring work of more than 3 pieces.

For stub bar boring only. For heavy-duty precision or rapid standard work. For boring 4 to 8 1/8" diam. holes with ordinary 3/8 x 3/8" tool bits and different diameter heads.

FEATURES — Adaptability to wide work-range. Speeds production, hastening positioning of tools and facilitating setting-up of jobs. Designed to eliminate vibration and chatter of cutting tools.

DESCRIPTION — To rough, semi-finish and finish bore without changing cutter bits, simply index boring head for individual cuts. For this purpose, it is mounted on an eccentric arbor. Boring head is locked firmly in position after each indexing, assuring constant uniformity of bore size. It takes either high-speed steel bits or



Jerguson Builds You
THE KIND OF GAGES
YOU WANT

You can get the kind of gages YOU WANT when you take your gage problems to Jerguson.

If you want a special gage or valve, or an adaptation of some standard one for a particular need, we'll give it to you. Our technically trained engineers have the ability, the know-how and the WILLINGNESS to pitch in and help you solve your problems.

Standard gages and valves, of course, are available at Jerguson's in the most complete and varied line offered anywhere.

Chemicals that raise havoc with ordinary gages can be handled with Jerguson special material and lined gages.

Write us about
your problems or
requirements.



When inquiring check CP 4592 on handy form, pgs. 2-3

Test Viscosity
WHERE IT COUNTS THE MOST
WHEN IT COUNTS THE MOST



WITH A
BROOKFIELD
SYNCHRO-LECTRIC
VISCOMETER

At last, Point of Process Viscosity readings are not only practical, but simple, rapid, and accurate as well. The Brookfield Viscometer is portable and plugs into any ordinary electrical outlet for connection. Operation is completely automatic and readings are given directly in centipoises.

**ONLY A BROOKFIELD HAS
ALL THESE ADVANTAGES**

- Portable — use in lab and plant
- Rapid — readings in 30 seconds
- Accurate — within 1% of range
- Simple — no technical knowledge to operate or to read
- Rugged — built to take plant handling without getting out of order.

BROOKFIELD
ENGINEERING LABORATORIES, INC.

210 Porter Street, Stoughton, Mass.

Please send me your new 8 page booklet describing and illustrating the various Brookfield Models and their uses.

Name
Company
Address
City State

When inquiring check CP 4593 on handy form, pgs. 2-3

Processing Equipment

carbide cutting tools. Ample backing is provided for cutting tools to eliminate chatter, vibration.

Drive key projects from arbor-body, fits each of 3 slots in boring head and serves as indexing stops for cutters. Tool bits are adjustable in each head-size to give approximate range of $\frac{3}{8}$ " diam. variation. Heads interchange on eccentric arbor, permitting advance setting of cutters for different bores, counterbores. When adjusted to proper size, tool bits are unaffected by changing heads or indexing.

An extra head fits eccentric arbor for additional cuts such as chamfering. Standard Kwik-Size units have No. 4, 5 or 6 Morse taper shanks. For individual machine tools, other tapers are obtainable. Special or extension arbors can be made to fit any lathe, turret lathe, boring or milling machine.

SOURCE — Product of Kaukauna Machine Corporation, Dept. CP, Kaukauna, Wis., or for more information check CP 4594 on handy form, pages 2 and 3.

**Tests Brinell of Varying Sizes
without Moving Elevator-Screw**

Time-saving machine eliminates Brinell microscope on production testing



Brinell testing machine

USES — Brinell testing machine for checking up to 800 pieces per hour, including parts varying as much as $\frac{3}{4}$ " in diameter and thickness, without moving elevating-screw.

FEATURES — Saves time. Eliminates need for using Brinell Microscope on production testing. Design prevents operator from removing specimen being tested before full load is applied to penetrator.

DESCRIPTION—

Equipped with comparator-indicator for production testing, machine is motor-driven and hydraulically operated. Load is held for a pre-determined time cycle (adjustable from 2 to 15 seconds), after which the penetrator automatically reverses itself to starting position, ready for next test.

Specimens or parts alike in thickness or diameter within $\frac{3}{4}$ " are tested without moving elevating screw. Furnished with foot or knee-type starter switch. Throat opening, 6"; maximum vertical opening, 14". Standard equipment includes flat and vee-type anvils.

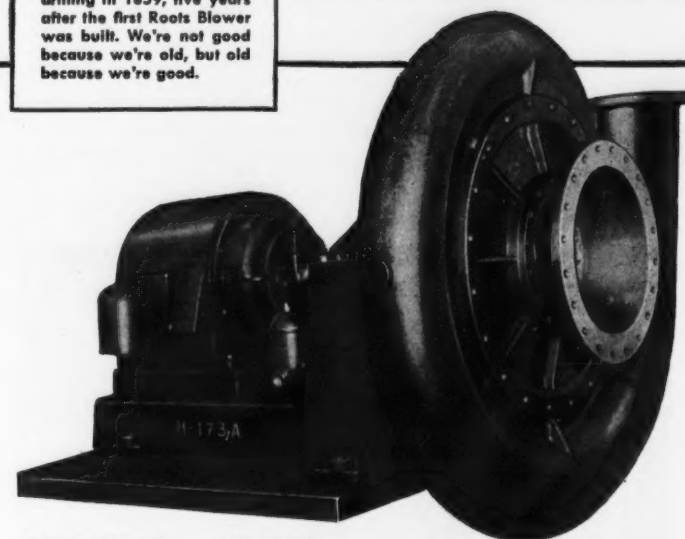
SOURCE — Product of Steel City Testing Machines, Inc., Dept. CP, 8843 Livernois, Detroit 4, Mich., or for more information check CP 4595 on handy form, pages 2 and 3.



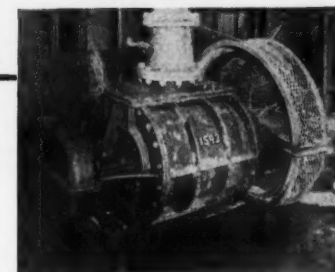
Oil was first produced by drilling in 1859, five years after the first Roots Blower was built. We're not good because we're old, but old because we're good.

**NO "HEDGING" ON
BLOWER QUESTIONS FROM**

R-C dual-ability



R-C Centrifugal Blower of 15,220 CFM capacity, used in sulphuric acid plant.



R-C Rotary Positive Vacuum Pump in use by an industrial processing company.

When you ask Roots-Connersville engineers about blowers, exhausters or gas pumps for manufacturing or processing chemicals, you'll get unbiased answers, without "hedging" between Centrifugal or Rotary Positive equipment.

That's because of our exclusive *dual-ability* to design and build both types. We recommend whichever is best suited to the specific application, and are the only blower builders offering you this important *dual choice* . . . an advantage which usually saves time, money and trouble.

You'll get outstanding performance, too, from R-C Vacuum Pumps and Meters. That's the result of 94 years of experience, plus the advanced thinking of alert engineers and designers.

So, for any problem of moving, mixing or measuring gas or air, consult R-C *dual-ability*.

ROOTS-CONNERSVILLE BLOWER CORPORATION
803 Richland Avenue, Connersville, Indiana

ROOTS-CONNERSVILLE
ROTARY CENTRIFUGAL
BLOWERS • EXHAUSTERS • BOOSTERS • LIQUID AND VACUUM PUMPS • METERS • INERT GAS GENERATORS



• • ONE OF THE DRESSER INDUSTRIES • •

When inquiring check CP 4596 on handy form, pgs. 2-3

When it comes to HANDLING CHEMICALS SPECIFY ILLINOIS PORCELAIN!

Porcelain's inherent corrosion-resistant qualities make it impervious to electrolytic action. Therefore it is outstanding as a successful handling medium for chemicals. Specify Illinois porcelain for permanent systems, thereby eliminating frequent replacements of corroded parts.



ANGLE VALVES

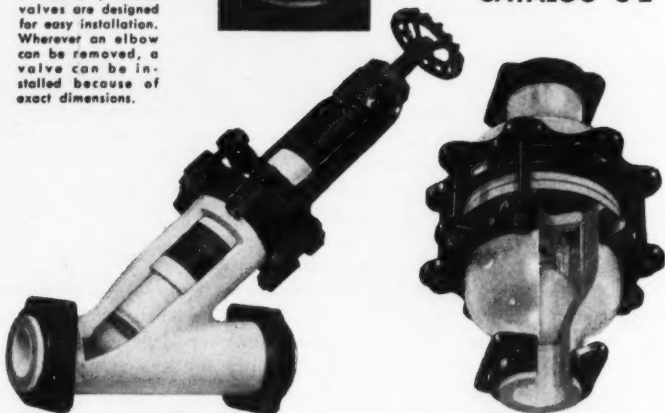
Available in all standard sizes from 1" to 6", these valves are designed for easy installation. Wherever an elbow can be removed, a valve can be installed because of exact dimensions.



PIPE AND FITTINGS

The inside and outside of all porcelain pipe and fittings are glazed white. The ends are ground true and smooth for gasket mounting. Flanges are accurately jig-assembled. Necessary bolts and nuts to make all connections are furnished for every joint.

WRITE FOR CATALOG C-2



Y-VALVES

Each Illinois valve has a very carefully ground and lapped valve seat which will hold chemicals at high pressures. Every valve is routine tested at 100 pounds pressure for a minimum of one hour to assure a perfect valve seat. Note that valve seat is located in lowest possible position to insure uninterrupted flow of material when stem is in open position. Packing is acid-resisting asbestos — graphite impregnated.

CHECK VALVES

Both vertical and angle check valves are porcelain to porcelain with no metal in contact with material being handled. Friction loss extremely low because ample space provided for flow around ball. Valve seat ground and polished to very close tolerances — ball is a polished sphere.



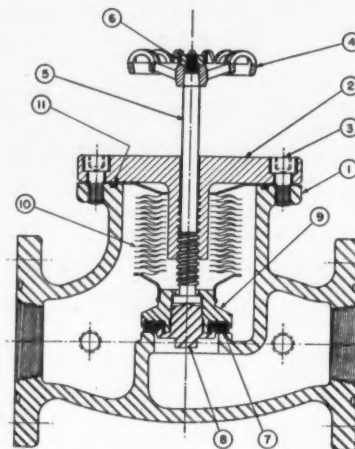
ILLINOIS
ELECTRIC PORCELAIN CO.
MADISON, ILLINOIS

When inquiring check CP 4597 on handy form, pgs. 2-3

Processing Equipment

Vacuum Valve Bellows Assembly Easily Re- placed on the Job

Silicone rubber used in unit for
systems with mercury diffusion
pumps



Details of Model 30 valve

USES — For service in connection with mercury boilers, mercury arc rectifiers and many high vacuum systems using mercury diffusion pumps where the vapors produced attack bronze and copper making conventional bellows type valves unsuitable.

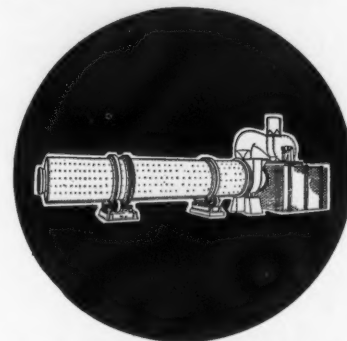
FEATURES — Bellows assembly readily replaceable on the job without removing the body from the piping.

DESCRIPTION—Model 30 vacuum valve has a cast medium carbon steel body, with high test iron cover. Bellows is of stainless steel and welded to a stainless steel disc holder. The valve disc and sealing ring between bellows and valve body are of silicon rubber.

Design features include large port and flow areas to reduce the resistance to flow of gas, especially in the region of molecular flow. Gauge connections are on inlet and outlet sides of body valve to aid in checking for leaks. One body style is offered for screw or flange connections; another for welded pipe connections. In sizes: 1 inch, 1½ inches and 2 inches in both body styles.

SOURCE — Kinney Mfg. Co., Dept. CP, Boston, Mass. . . or check CP 4598 on the handy form, pages 2 and 3.

Ruggles - Coles DRYERS for Every Application



Double and single-shell rotary dryers in nine distinct types — designed for direct, indirect, and steam heat. Modifications of standard designs for peculiar drying problems. Write for Bulletin 16-C.

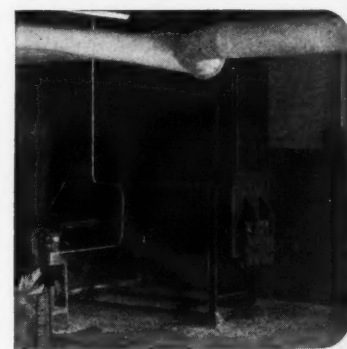
HARDINGE

COMPANY INCORPORATED
YORK, PENNSYLVANIA — 240 Arch St. • Main Office and Works
NEW YORK 17—122 E. 42nd St. • 205 W. Wacker Drive—CHICAGO 6
SAN FRANCISCO 11—24 California St. 200 Bay St.—TORONTO 1

When inquiring check CP 4599 on handy form, pgs. 2-3



HYDRO-CLONE



suppresses dust from plastics

Above is the Type "R" Hydro-Clone used to assure clean air in the plastics division of a large manufacturing plant. This Hydro-Clone is specified when space is at a premium and capacity not over 12,000 cfm is required.

Type "R" is of compact

design suitable for indoor installation. It reduces dust to harmless sludge . . . requires about 1 gal of water per 1,000 cu ft of air treated . . . fully described in Bulletin FY-127.

Write for full information about this and other models for every industrial need.

WHITING CORPORATION

15667 Lathrop Ave.
Harvey, Illinois

FREE
New booklet of
Practical Information on
Dust Collection.
Ask for Bulletin
FY-142.

When inquiring check CP 4600 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

Processing Equipment

Refractory Coating Impervious to 3390°

Water readies for application

USES — As insulative coating for preventing spalling action, resisting heat penetration in fire boxes, furnaces and crucibles.

FEATURES — Vitro-seal refractory coating forms a semi-glazed protective monolithic wall of from 8.5 to 9 hardness (Diamond is 10-Mohs scale) between fire and the firewall.

DESCRIPTION — The coating is easily applied by either brush or spray. Addition of water makes it ready for application. The cost of the material is very moderate. One lb. covers 7-8 sq. ft.

SOURCE — The refractory coating described here is the product of the Whitman Company, Dept. CP, 1407 Esperanza Ave., Los Angeles, Cal. . . or, for more information, check CP 4601 on the handy form, pages 2 and 3.

★

Rod Produces Rc 67 Overlays on Copper

Requires no additional heat treatment

USES — Produces extreme overlay hardness on copper and applies equally well to steel and ferrous metals generally. Special applications include bearings, gears, marker teeth, centrifugal pumps, chemical processing components and where corrosion resistance is important.

FEATURES — Deposits of beryllium copper followed by heat treating or cold working are no longer required to produce maximum overlay hardness on copper where hardness is the sole requirement. No additional heat treatment is required.

DESCRIPTION — The new alloy has a bonding temperatures of 1800 degrees F. and remelts at 1950 degrees F.

SOURCE — Product of Eutectic Welding Alloys Corporation, Dept. CP, 40 Worth St., New York 13, N. Y. . . or for more information check CP 4602 on handy form, pages 2 and 3.

For more information on product at right, specify CP 4603 . . . see information request blank between pages 2-3.

Why take the long way 'round?

Because of the chemical similarity of rare earth metals and their low concentration in ore sources, their isolation by ordinary procedures involves as many as 1500 fractional crystallizations. Ion exchange offers a far more practical method. If the rare earth is passed through the sodium form of AMBERLITE IR-100, the metals are preferentially adsorbed in chromatographic bands. Treatment of the ion exchanger with the proper acid or "complex-forming" reagent releases the various rare earth metal salts in increasingly concentrated increments.

Chromatographic isolation with Amberlite Ion Exchange Resins

The preferential adsorption displayed by AMBERLITE Ion Exchange Resins greatly simplifies many otherwise complex recovery methods. In many cases, simple adjustments in rate of flow and depth of resin bed permit adsorption of ions in different strata of the bed. Ions can then be recovered in concentrated form by continued recycling or by proper choice of eluting reagent.

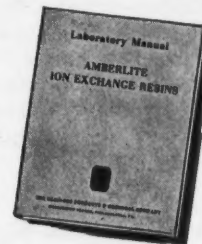
This preferential adsorption by the AMBERLITES permits separating materials of similar chemical characteristics, without resorting to laborious and time-consuming fractional crystallizations.

Whether you are interested in special processing problems—or in softening or complete deionization of water—it will pay you to investigate the AMBERLITES. Our technical staff will gladly discuss potential uses.

AMBERLITE is a trade-mark, Reg. U.S. Pat. Off.,

Facts you'll want about the Amberlites

Our new *Laboratory Manual on the AMBERLITES* contains worthwhile information on ways in which these Ion Exchange Resins can help you. For your copy, write The Resinous Products & Chemical Company, Dept. CE-2, Washington Square, Philadelphia 5, Pa.

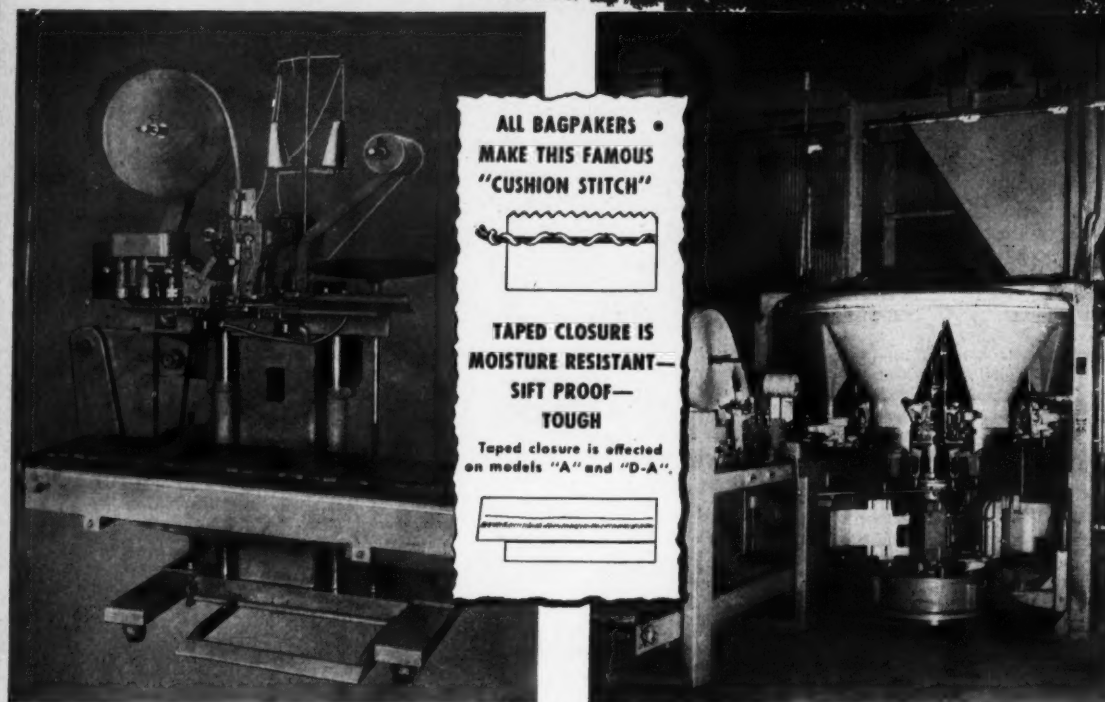


THE RESINOUS PRODUCTS & CHEMICAL COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

here's your complete packaging operation!

BY BAGPAK*



MODEL "DA" (portable)—One operator, filling and closing, can handle 2 to 4 100-lb. bags a minute . . . 6 to 12 a minute where filled bags are delivered to BAGPAKER conveyor (quickly adjustable for various bag sizes). Starting and stopping of sewing operation is automatic, no tape wasted.

At absolutely no obligation to you, a BAGPAK engineer will gladly discuss your packaging machinery and multiwall paper bag requirements . . . show you the best methods of weighing, closing and handling bags.

*Manufacturers of famous CUSHION STITCH OPEN MOUTH MULTIWALL PAPER BAGS

• Reg. U. S. Pat. Off.



INTERNATIONAL PAPER COMPANY
Bagpak Division
220 East 42nd Street • New York 17, N. Y.

BRANCH OFFICES: Atlanta, Baltimore, Boston, Chicago, Cleveland, Joplin, Mo., Los Angeles, New Orleans, Philadelphia, Pittsburgh, St. Louis, Syracuse. IN CANADA: Continental Paper Products, Ltd., Montreal, Ottawa.

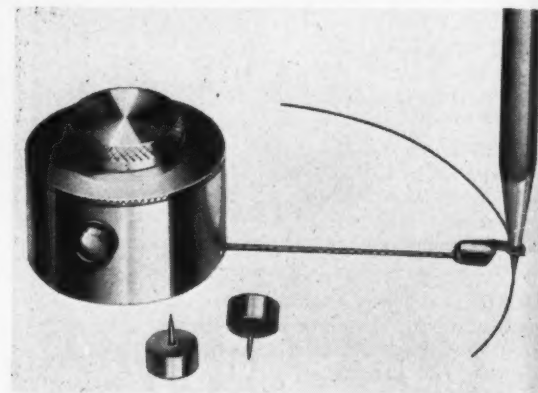
When inquiring check CP 4604 on handy form, pgs. 2-3

Processing Equipment

Vest-Pocket Size Beam Compass Makes Circles 2" to 12' Diam.

Stretch-proof linen line holds true to desired length, report

USES — Vest-pocket size beam compass for making circles from 2" to 12' in diameter.



"Vest-pocket" beam compass

FEATURES — Stretch-proof linen line holds true to any desired length, manufacturer reports. Compact and versatile.

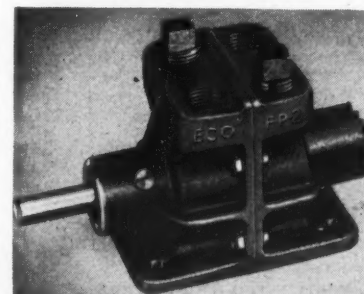
DESCRIPTION — Unit consists of a stretch-proof linen line on an aluminum-encased reel. Three special push-pins serve as center points. A releasing button permits line to be drawn out to desired radius.

SOURCE — Made by Stewart-Jackson Instrument Company, Inc., Dept. CP, 815 Yale Ave., Los Angeles 12, Calif. . . . or for more information check CP 4605 on handy form, pages 2 and 3.

★

Use Gearless 2-Impeller Pumps for Most Liquids Up to 50 psi

1/4 and 1/2" sizes have capacities from 1 to 12 gpm, speeds from 200 to 3500 rpm



1/2" gearless double impeller pump against pressures up to 50 psi.

FEATURES — Smooth running. All wearing parts easily replaced. Sturdily built for hard use.

DESCRIPTION — Available in 1/4 and 1/2" sizes, and

USES — Line of gearless pumps for general industrial service. Adaptable to nearly every type of liquid handling, including acids, solvents, oils, etc. For use in various positions covering a wide operational range, and

CHEMICAL PROCESSING Preview

Processing Equipment

capacities from 1 to 12 gpm, varying with pump speeds and pressures. Can be run, and will deliver, at speeds from 200 to 3500 rpm.

Bodies are available in stainless steel, monel and bronze. All parts contacting liquids can be adapted for that special purpose, including impellers. Latter are made of special wear-resistant materials. Self-lubricating bearings assure freedom from fouling of intake or discharge lines by pump grease or oil.

SOURCE — Product of Eco Engineering Company, Dept. CP, 12 New York Ave, Newark 1, N. J. . . . or for more information check CP 4606 on handy form, pages 2 and 3.

★

Permanent Hand Magnet Picks Up, Releases 15 lbs. of Scrap

Separates or salvages; speeds removal of heat-treated parts from carbon

USES — Load-releasing, adjustable hand magnet for non-electric use in drawing steel parts from tumbling media; handling nuts, bolts, screws, nails and small parts; separating stacked steel strips; removing heat-treated parts from carbon; handling hot or cold parts.

Also for separating steel from non-ferrous materials of many kinds such as brass, chemicals and fibres.

FEATURES — Light-weight; operated with one hand. Fully self-powered; requires no current, wires or batteries. Requires no servicing. Will not lose power, manufacturer reports, regardless of kind or length of use. Saves labor and material.

DESCRIPTION — Permanent, load-releasing type. Lifts up to 15 lbs., releasing loads as desired when finger-tip lever is raised. Moisture-proof, aluminum-and-stainless steel case contains two 4" Alnico magnets. Dimensions of over-all unit: 3 x 5 1/2 x 8".



Load-releasing hand magnet

SOURCE — Multilift Model S Magnetic Separator, produced by Multi-finish Mfg. Company, Dept. CP, 2116 Monroe Ave., Dept. No. 121, Detroit 7, Mich. . . . or for more information check CP 4607 on handy form, pages 2 and 3.

MARCH, 1948

Controlled Drying in Moderate Output



PROCTOR Tray Dryers

Many producers of powdered, granulated and pellet-type materials that require carefully controlled drying—but whose output make a huge continuous system impractical, have found Proctor tray dryers the answer to their needs. These dryers, which are built in standard 16 and 20 tray types, have all of the features that make possible the same close control that is inherent in large continuous installations. The one difference is output—the tray dryer offering the lower output required in many cases. Capacities vary, of course, with the nature of the material. Where capacities are greater than is possible with the standard tray dryer—the Proctor "through circulation" tray dryer is often recommended. This machine is applicable only where physical characteristics of the product will permit air to be circulated through the bed of material on the tray. This "through circulation" increases output by speeding drying. Proctor tray dryers may now be equipped with an automatic door opening device to simplify loading. If your production is moderate—but requires carefully controlled drying—investigate Proctor tray dryers today.

PROCTOR & SCHWARTZ, INC.
Philadelphia 20, Pa.

When inquiring check CP 4608 on handy form, pgs. 2-3



A FEW TYPICAL MATERIALS BEING DRIED IN THESE MODERN TRAY DRYERS

Aspirin
Nicotinic Acid
Chromic Oxide
Cupric Oxide
Synthetic Resin
Iron Phosphate
Calcium Penothenate
Ceramic Products
Bottles
Moulding Powder
Synthetic Rubber
Dry Colors
Pharmaceuticals of all
characters

FOR BETTER MIXING OF HEAVY PRODUCTS

GROEN
STAINLESS STEEL
STEAM JACKETED
**TWIN-SHAFT
MIXER KETTLE**



Introducing MODEL TA . . . completely SANITARY new GROEN Double-Action, heavy-duty, extra-rugged unit for heavy processing. Fully enclosed vertical motor drives two shafts: (1) — a slow speed shaft with extra-large shovel type scrapers; and (2) — a secondary high speed shaft equipped with any of a variety of mixers, blenders or beaters, all interchangeable for various kinds of processing.

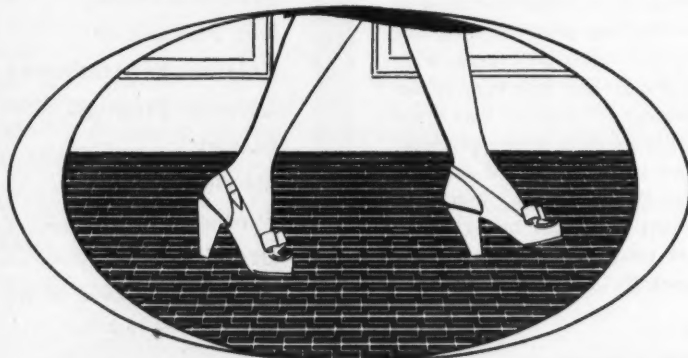
With GROEN exclusive removable shaft couplings all agitator parts are dismountable in seconds for easy cleaning . . . yet cannot come apart in operation. And coupling is equal in strength to a solid shaft. A very durable, widely versatile mixer. Write for details. GROEN MFG. CO., 4531 W. Armitage Ave., Chicago 39, Ill.

WHEN BETTER METALS ARE MADE — GROEN WILL USE THEM

When inquiring check CP 4609 on handy form, pgs. 2-3

THE *Safe* OPEN STEEL FLOORING IS TRI-LOK

No object over 1/4 square inch can pass through super-safe U-Type Tri-Lok Flooring. Fabricated without bolts, rivets or welds, it is unsurpassed for plant installation, walkways, loading platforms. Guarantees efficient distribution of concentrated loads . . . maximum free opening for light and air. Write for Bulletin 1140.



DRAVO CORPORATION
NATIONAL DEPARTMENT
1103 PITT BANK BLDG., PITTSBURGH 22, PA.
(Distributor for THE TRI-LOK COMPANY)



When inquiring check CP 4610 on handy form, pgs. 2-3

Processing Equipment

Air or Electric-operated Units Stir 80% Glycerol Solutions

Agitate varied quantities of liquids under pressure in vacuums, closed systems



Magnetic stirrer

quantities of solutions. Air-operated unit is for use wherever explosive vapors are present.

FEATURES — Motor has sufficient torque to vigorously stir an 80% glycerol solution.

DESCRIPTION — Both stirrers utilize a rotating magnetic field to induce variable-speed stirrer action. Electric unit is designated Magne-Mix; air-operated unit is designated Aero-Magne-Mix.

SOURCE — Manufactured by Precision Scientific Company, Dept. CP, 3737 W. Cortland St., Chicago 47, Ill. . . . or for more information, check CP 4611 on handy form, pages 2 and 3.

USES — Two magnetic stirrers, one operated electrically, the other operated by air, are useful in agitating liquids under pressure, in a vacuum, or in a closed system. For large or small

Fountain Marker Writes on Glass, Metal

Makes fine or thin lines

USES — Shirt or vest pocket fountain marker for writing on wood, paper, crates, boxes, metal, stone, glass or rough, irregular surfaces. For marking addresses on packages too small to be stenciled.

FEATURES — Positive ink control. Small and handy. Makes either fine or broad lines. Different colored inks are available. Pocket-sized, streamlined and attractive. All-aluminum.

DESCRIPTION — All-aluminum. Pressing on tip opens valve, permitting ink to flow. Releasing pressure shuts off flow until it is again necessary to saturate tip. Chisel-tip has different surfaces for fine or broad lines.

SOURCE — Available from Diagraph-Bradley Industries, Inc., Dept. CP, 3745-55 Forest Park, St. Louis 8, Mo. . . . or for more information check CP 4612 on handy form, pages 2 and 3.

PALO TIME SWITCH Sr.

Our New Catalog Digest is now ready! Write today for your copy.

**Model
2475**



The PALO TIME SWITCH Sr. is a completely self-contained unit incorporating the necessary equipment to turn on or off any type of electrical laboratory apparatus on a predetermined time schedule.

110 Volts, AC only
20 AMPS non-inductive or 1 HP motor load

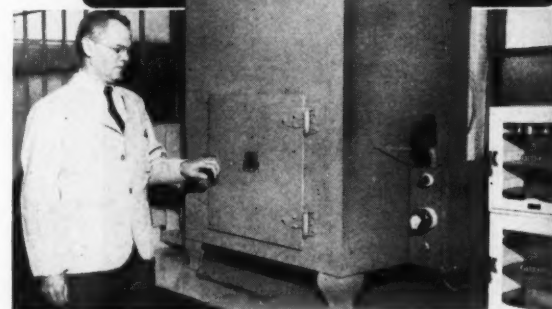
Write for
Bulletin
2404 W.

PRICE \$37.50

PAIO-MYERS INC.
81 READE STREET • NEW YORK 7, N.Y.

When inquiring check CP 4613 on handy form, pgs. 2-3

Despatch LABORATORY OVENS



Give You ACCURACY + SPEED

"First choice of lab technicians" is the highest compliment any oven can receive, and one often given to Despatch Laboratory Ovens.

Temperature control is accurate to $\pm 1^\circ \text{C}$. Uniform heat is assured by horizontal heat flow. Oven recovers in 2 to 8 min. after loading cold charge. Handles powders, liquids or solids for heating, drying, baking, testing, processing. 4 sizes, temperatures to 302°F . and 500°F . Write for Bulletin 105, state uses required.

DESPATCH
Established 1902
OVEN CO.

Industrial and Laboratory
oven equipment for all
applications

343 Despatch Bldg., 8th St. at 7th Ave. S.E., Minneapolis 14, Minn.

When inquiring check CP 4614 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

Processing Equipment

Heliwelding Speeds Welding Output of Light Metals

Heliweld machine holder is fixed or mobile; automatic unit holds constant arc length

USES — For high-speed, high quality welding of light metals such as stainless steel, aluminum and magnesium. Equipment consists of: 1) Machine-type electrode holder and 2) automatic Heliweld unit. Each has its own particular use:

Where production requirements and nature of work permit, machine equipment is designed for mounting on a radiograph or other suitable travel mechanism, either for moving along the joint or for fixed-position use with work moving beneath the arc. For use with AC or DC welding current.

Where work has inherent irregularities, or where arc length is particularly critical, the automatic unit compensates for set-up irregularities and assures continuous weld of consistent dimensions and quality. For use with DC welding current only.

FEATURES — Automatic Heliweld unit maintains constant arc length.

DESCRIPTION — Heliweld machine holder: has same barrel and rack as standard $1\frac{3}{8}$ " diam. machine gas cutting torches.

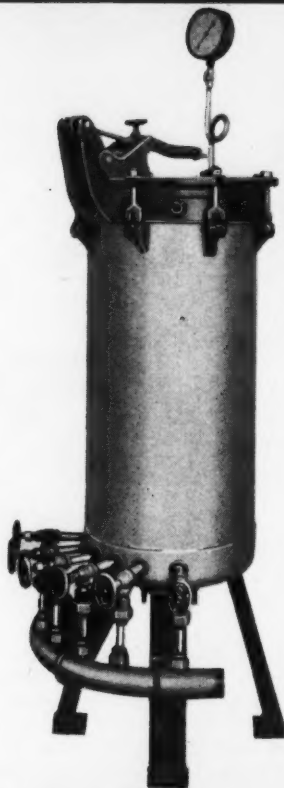
Automatic Heliweld unit: consists of holder, holder carriage and control box. Designed for continuous operation, it is fully automatic, electronically controlled.

Both units have welding current capacity of 300 amps, and are fully insulated for high frequency current often required for arc-starting and stabilization in welding. Holders are virtually identical, being water-cooled, fully insulated, with all-plastic exterior. Holder weight, 28 ozs.; length, about 10". Orifices surrounding the electrode control flow of shielding gas to provide complete shielding. Gas cap is non-conducting long-lived ceramic.

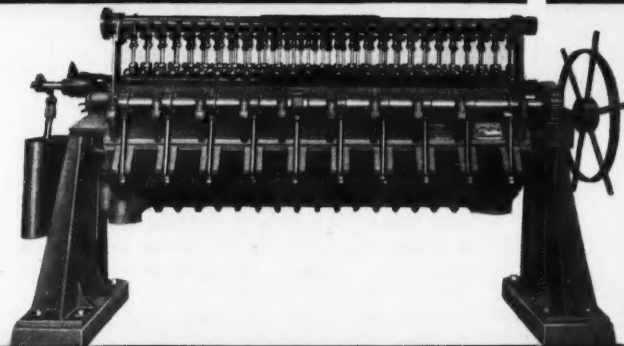
SOURCE — Available from Air Reduction Sales Company, Dept. CP, Dept. 1316, 60 E. 42nd St., New York 17, N. Y. . . . or for more information check CP 4615 on handy form, pages 2 and 3.

For more information on product at right, specify CP 4616 . . . see information request blank between pages 2-3.

These FILTERS OFFER GOOD SELECTIVITY



• Oliver Pressure Filter



• Sweetland Pressure Filter

WHERE FILTRATION MUST BE PRESSURE

It's too bad that not all filtration or clarification can be handled by the continuous vacuum method because of its simplicity, ease of handling and economy. But since some products just cannot be handled that way, **PRESSURE FILTRATION** is definitely in the process plant picture. That's why Oliver United engineers have continued to develop pressure filters and broaden their knowledge of pressure filtration.

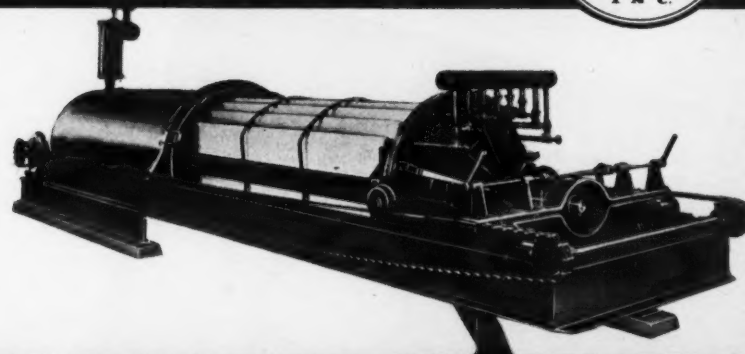
We can offer the four distinctly different filters shown. The Oliver Pressure and Oliver Precoat are essentially clarifiers or "polishers" and the Kelly Filter is primarily a "high pressure" unit or for use where a jacketed unit is required. All offer advantages over conventional filter presses.

If you have a job that is labeled "pressure filtration" write us about it. Perhaps one of these four filters would be better than the conventional press.

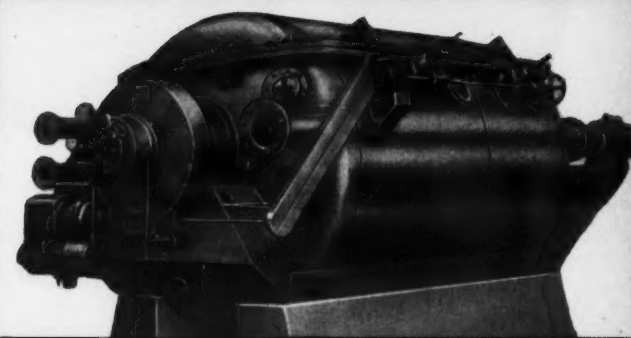
OLIVER UNITED FILTERS



INC.



• Kelly Pressure Filter



• Oliver Pressure Precoat Filter

New York 18, N. Y., 33 West 42nd Street
San Francisco 11, California

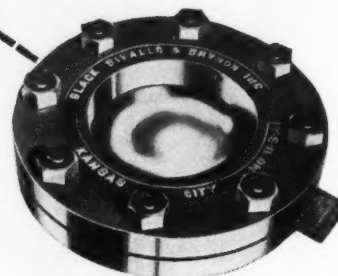
Chicago 1, Ill., 221 N. LaSalle Street
Western Sales Division: Oakland 1, Calif., 2900 Glascock Street

Sales & Manufacturing Representative: E. Long Limited, Orillia, Canada

Factories: Oakland, Calif. • Hazleton, Pa. • Orillia, Canada • Melbourne, Australia



Stud Book



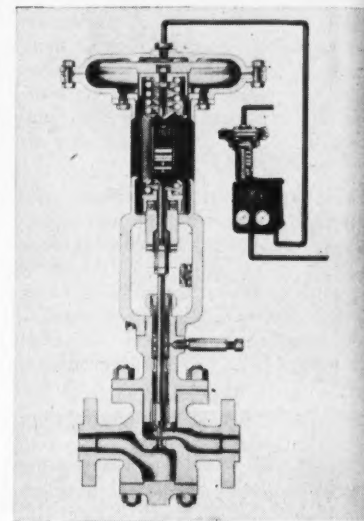
Thoroughbred horses and pedigreed livestock have nothing on **SAFETY HEADS** for complete "family" records. Every **SAFETY HEAD** rupture disc is entered in the **SAFETY HEAD Stud Book** according to type, size, pressure rating, date of manufacture and delivery and many other factors. Performance records of identical rupture discs sacrificed on the factory test block are also entered. It's quite a library now, for thousands of factories all over the world depend upon **SAFETY HEADS** for protection against over-pressure. **SAFETY HEAD** rupture discs burst in tension at pre-determined pressures . . . offer a full-throated, pipe-size relief vent. Ideal for either gases or liquids. Replacement discs to exact specifications are easily, quickly provided by checking the records. Write today for latest catalog. Address Special Products Division, Black, Sivalls & Bryson, Inc., Power and Light Building, Kansas City 6, Mo.

BLACK, SIVALLS & BRYSON, INC.
KANSAS CITY, MO. OKLAHOMA CITY, OKLA.

Processing Equipment

Easy to Reverse Action of These Diaphragm Regulating Valves

Incorporate "condenseal" cooling bonnet — for use with air; water operated controllers



Sectional view of DLS valve

USES — Suitable for steam pressures up to 600 psi and temperatures up to 800 degrees F. and for pressure drop across the main valve as high as 300 psi in the smaller sizes.

FEATURES — Single seated, tight closing main valves; hardened stainless steel valves, stems and guides, and integral hard surfaced seats. Valve-above-seat position for reverse or direct acting valves. Easy reversal of valve action by a simple change of diaphragm superstructure.

DESCRIPTION — New design features have been incorporated in the Class DL and DLS diaphragm regulating valves with "condenseal" cooling bonnet for use with air or water operated controllers. Included are a stainless steel radiating tube and a condensate reservoir for steam service to protect the low friction packing gland at temperatures above 450°. Assembly maintains constant area throughout travel.

SOURCE — Leslie Company, Dept. CP, 65 Delafield Ave., Lyndhurst, N. J. . . . or for more information check CP 4617 on the handy form pages 2 and 3.

For more information on product at left, specify CP 4618 . . . see information request blank between pages 2-3.

Warms Respirator-Supplied Air, Even at 30° Below Zero

Thermostatically-controlled 4-lb. unit clips at rear of belt for refrigerated work conditions



Respirator airline heater

USES — Heater for airlines of all standard M. S. A. airline respirators and abrasive masks. For warming chilled air supplied through respirators to workers in refrigerated enclosures and winter temperatures.

FEATURES — Eliminates cold, biting air which is a source of discomfort to wearers on cold-weather jobs. Comfortable even in temperatures of 30° below zero. Compact and lightweight, offering no interference with worker's movements.

DESCRIPTION —

Unit consists of compact, thermostatically-controlled electric heater and heat exchanger, clip-mounted to rear of user's belt and worn practically as a part of the air hose. Weight, about 4 lbs. Enclosed in a rubber-covered cylinder 11" long with outside diam. of 2½".

Equipped with air and electrical fittings through a wire-reinforced corrugated tube which curves naturally around the waist. Operated by 110-115 v. current, AC or DC. Developed during the war for all-weather operations in shipyards, after tests indicated that even air heated at source becomes uncomfortably cold after passing through only a short length of hose. Airline Heater.

SOURCE — A development of Mine Safety Appliance Company, Dept. CP, Braddock, Thomas and Meade Sts., Pittsburgh 8, Pa. . . . or for more information check CP 4619 on handy form, pages 2 and 3.

★

76-Page Catalog Covers Switches and Breakers, Other Electric Controllers

A 76-page condensed catalog covers industrial safety switches, service equipment, multi-breakers, industrial circuit breakers, duct systems, lighting and power panelboards, motor control devices, also pressure, float and vacuum switches for water pump control, similar equipment. Literature includes sizes, capacities and dimensions, also convenient tables for quick reference in proper selection of devices. "Square D Digest No. 130."

Issued by Square D Company, Dept. CP, 6060 Rivard St., Detroit 11, Mich. When inquiring specify CP 4620 on handy form, pages 2 and 3.

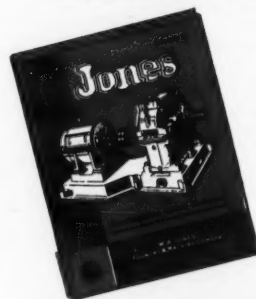
MARCH, 1948

SINGLE! DOUBLE! TRIPLE!

*... Every type of Herringbone
Speed Reducer that you might need*

Jones Herringbone Gear Speed Reducers are built in a wide range of ratios and ratings to cover every requirement. Single (Type SH) reducers in standard ratios range from 1.25 to 1 up to 11 to 1 in ratings from 1.3 to 440 H.P. Double (Type DH) reducers are built in standard ratios from 10.9 to 1 up to 72 to 1 in ratings from 0.5 to 275 H.P. The triple reduction reducers (Type TH) cover a range of ratios from 86.9 to 1 up to 355.8 to 1 in ratings from 0.3 to 78 H.P.

All these reducers have heat treated gears, ground shafts and are mounted with anti-friction bearings throughout. Cast iron bases are available for all variations of motor assembly. Liberal stocks are carried to facilitate shipments.



Here's Complete Information About the Application of Herringbone Reducers

This 128-page catalog of Jones Herringbone Reducers presents a vast amount of data relating to Herringbone Reduction Units. Illustrations show a broad range of herringbone reducer applications and the technical information shows how to select

reducers for all conditions of service in accordance with the A.G.M.A. recommended practice.

Write for your free copy of this valuable treatise

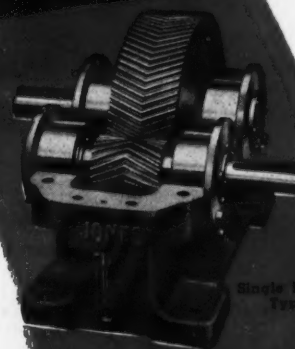
W. A. JONES FOUNDRY & MACHINE CO.

4455 Roosevelt Rd., Chicago 24, Ill.

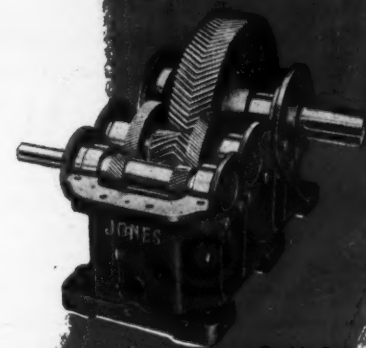
Jones

HERRINGBONE — GEAR — SPUR — GEAR SPEED REDUCERS
PULLEYS • GEARS • V-BELT SHEAVES • ANTI-FRICTION
FOLLOW BLOCKS • FRICTION CLUTCHES • FLEXIBLE COUPLINGS

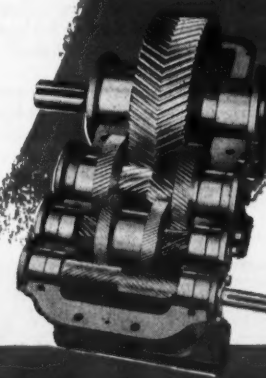
When inquiring check CP 4621 on handy form, pgs. 2-3



Single Reduction
Type SH



Double Reduction
Type DH

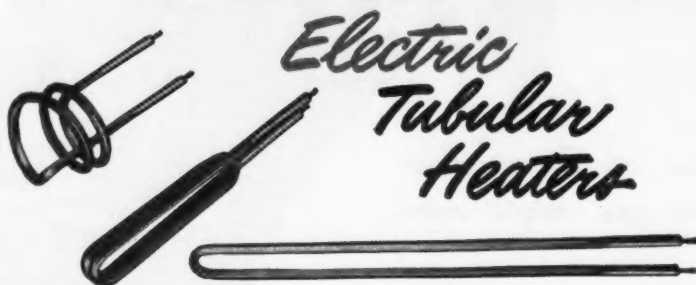


Triple Reduction
Type TH

HEAT

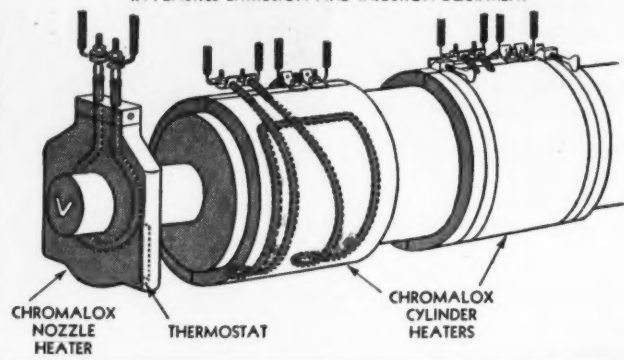
curved to fit your needs!

Chromalox



*Electric
Tubular
Heaters*

CHROMALOX ELECTRIC TUBULAR HEATERS CAST INTO ALUMINUM FOR USE IN PLASTICS EXTRUSION AND INJECTION EQUIPMENT



The above is only one example of the many types of applications easily obtained with CHROMALOX Electric Tubular Heaters. These heaters can be bent and formed for heating processing equipment, tanks, kettles, dies, platens and irregular surfaces.

Straight Tubular Units are used for convection or radiant heaters in ovens, platens and other high temperature equipment. Accurate temperature controls, with thermostats, guard against excessive processing temperatures.

CHROMALOX Application Engineers will gladly work with you on your heating problems.

CHROMALOX

Electric Heat at its Best

EDWIN L. WIEGAND COMPANY • 7517 THOMAS BLVD. • PITTSBURGH, PA.

When inquiring check CP 4622 on handy form, pgs. 2-3

Guide to CHROMALOX Electric Heat applications

Check this list

- Air Heaters
- Annealing Ovens
- Annealing Heaters
- Asphalt Melting
- Bobbitt Melting
- Baking Ovens
- Barrel Heaters
- Branding
- Broilers & Hatchers
- Can Soldering
- Cast Heating
- Cleaning Tanks
- Cooling Tanks
- Core Baking
- Degreasing
- Die Heating
- Distilling
- Dryers
- Dropping Resistors
- Drum Heating
- Drying Ovens
- Duct Heaters
- Electroplating
- Embossing Dies
- Film Dryers
- Foundry Molds
- Fuel Oil Preheating
- Galvanizing
- Gas Heating
- Glass Cookers
- Glue Pots
- Glue Setting
- Hair Dryers
- Heat Seals
- Hot Plates
- Humidity Control
- Inks Red Heating
- Ink Dryers
- Labeling Adhesives
- Lacquer Dryers
- Lens Cementing
- Matrix Presses
- Molding Pots
- Mold Heating
- Molten Salt Baths
- Oil Baths
- Oven Heaters
- Package Sealers
- Paint Dryers
- Pipe Heating
- Pitch Pots
- Plastic Extruders
- Platen Heaters
- Plating Baths
- Preform Heating
- Print Drying
- Process Air
- Process Kettles
- Radiant Heating
- Roll Heaters
- Room Heaters
- Sealing Equipment
- Soaking Tanks
- Soldering Irons
- Space Heaters
- Steam Generators
- Steam Superheaters
- Sterilizers
- Tempering Baths
- Tinning Pots
- Tire Recapping
- Varnish Drying
- Volatile Fluid Heating
- Vulcanizers
- Water Heaters
- Wax Melting

and Hundreds of other Applications throughout industry

GET THIS BOOKLET

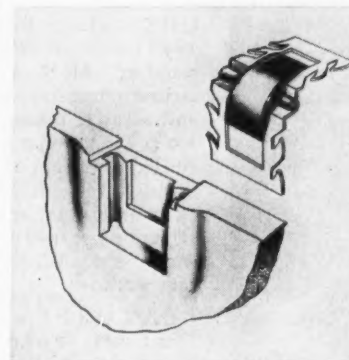
It is loaded with practical ideas which will save you time, money and labor in all types of industrial heating applications.



Processing Equipment

Snap-action Hinge Simplifies Plastic Package Assembly

Eliminates use of screws and rivets in thermosetting thermoplastic materials



Hinge for plastic packages

relieves strain on plastics, providing manufacturer reports.

DESCRIPTION — Incorporates a spring clip, although the hinge can be used without a spring for boxes not requiring snap-action.

Designed with teeth which bite into slots molded in both cover and base of package. All spring tension is concentrated on the metal itself, rather than on box cover and base.

SOURCE — Developed by General Electric Company, Plastics Division, Dept. CP, Pittsfield, Mass., or for more information check CP 4623 on handy form, pages 2 and 3.

*

350-Watt Hot Plate Takes 600 cc Beakers of Inflammables

Ceramic-encased heater element, asbestos-cement insulation give safety, low radiation

USES — Compact, low-wattage hot plates for total



350-watt hot plate heater

solids, gasoline distillation and Dean-Stark water tests.

CHEMICAL PROCESSING Preview

Processing Equipment

Also for general utility laboratory use and other ASTM tests.

Takes 600 cc beakers. Has diversified applications in chemical and oil industry laboratories.

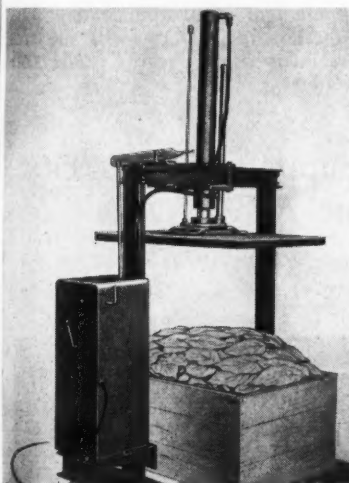
FEATURES — May be used safely for all types of tests involving gasoline or other inflammable liquids or gases, manufacturer reports, even though boiling-over or spilling occur. For cases where heat radiation into the laboratory is a problem and source of discomfort, the heater holds radiation to minimum.

DESCRIPTION — All resistant wires are ceramic-encased. Outside case is cement and asbestos composition, resisting shock and heat transfer. Accurate heat control easily maintained by use of a variable transformer. Various wattages. Standard 350-watt model weighs about 2-1/2 lbs. 110 volts AC or DC.

SOURCE — Made by Hodgson Engineering & Manufacturing Company, Dept. CP, 7th & Rockford Sts., Tulsa, Okla. . . . or for more information check CP 4624 on handy form, pages 2 and 3.

Manual Packing Presses Can Be Made Hydraulic

Hydraulic cylinder and motored pump unit install on channel frame; adjust for bulk



Hydraulically-equipped packing press

work. Available piston-stroke of the press is greater than required for any one operation, but limit stops are provided. These are pre-adjustable for products differing in bulk, as where one product must be compressed more than another in order to fasten down lids of packing cases.

Both extension and return strokes of the double-acting hydraulic cylinder are power-operated. Pumping unit consists of 3/4 hp motor, gear-type hydraulic pump, a relief valve to prevent over-loading, and lever controls and self contained oil reservoir. Flexible hose connections between power-unit and cylinder permit easy installation.

SOURCE — Developed by LYON-Raymond Corporation, Dept. CP, 4035 Madison St., Greene, N. Y., or for more information check CP 4625 on handy form, pages 2 and 3.

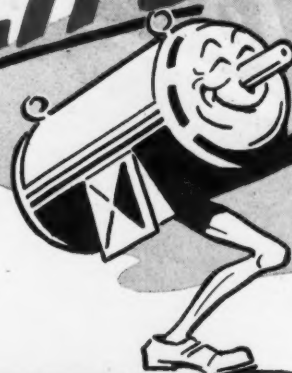
USES — Attachment for hydraulic operation of packing presses now manually-operated. For products differing in bulk and compression requirements.

FEATURES — Pre-adjustable for any particular material, making the process practically automatic.

DESCRIPTION — Unit consists of hydraulic cylinder and motor-operated pumping unit for installation on a channel frame-

Tough going
brings out the

LONGER LIFE



... in Totally-Enclosed

RELIANCE Precision-Built MOTORS

Wherever motors operate frequently under abnormal conditions, Totally-Enclosed, Fan-Cooled Reliance A-c. Motors continually amaze users by their longer life. That important extra protection they have—against moisture in the air, against liquids splashed or streamed right on them, against dust and abrasives—pays so much more than it costs!

There's *extra* protection inside, too—to make that longer life of dependable service doubly sure. Ventilation that licks the heat problem is provided by air drawn through end bracket and directed by baffles through streamlined passages.

Thirteen-point winding treatment includes six special steps to assure the most effective insulation possible. And an improved bearing design eliminates all lubrication worries! Write today for Bulletin C-125 (Bulletin C-218 if interested in D-c. motors).



RELIANCE ELECTRIC & ENGINEERING CO.
1067 IVANHOE ROAD • CLEVELAND 10, OHIO

Appleton, Wis. • Birmingham • Boston • Buffalo • Chicago • Cincinnati • Dallas
Denver • Detroit • Gary • Grand Rapids • Greenville, S. C. • Houston • Kansas City
Knoxville • Little Rock • Los Angeles • Milwaukee • Minneapolis • New Orleans
New York • Philadelphia • Pittsburgh • Portland, Ore. • Roanoke, Va. • Rockford
St. Louis • San Francisco • Seattle • Syracuse • Tampa • Tulsa • Washington, D. C.
Sao Paulo, Brazil

Reliance Totally-Enclosed, Fan-Cooled, Precision-Built Motor. For convenience, conduit box of Reliance Motors may be mounted in any of four positions or completely eliminated, as shown here.

RELIANCE^{AC}_{DC} MOTORS

"Motor-Drive is More Than Power"

When inquiring check CP 4626 on handy form, pgs. 2-3



- ➡ Corrugated and Solid Fibre Boxes
- ➡ Folding Cartons
- ➡ Kraft Grocery Bags and Sacks
- ➡ Kraft Paper and Specialties

Every step in handling—from your production line by truck, train, ship, or plane to the retailer and consumer is a challenge to the container that protects your product. Gaylord correct functional design, better materials, and precision manufacturing provide that vital extra margin of safety.

Call or write the nearest office.

GAYLORD CONTAINER CORPORATION, General Offices: SAINT LOUIS

New York • Chicago • San Francisco • Atlanta • New Orleans • Jersey City • Seattle
 Indianapolis • Houston • Los Angeles • Oakland • Minneapolis • Detroit • Jacksonville
 Columbus • Fort Worth • Tampa • Cincinnati • Dallas • Des Moines • Oklahoma City
 Greenville • Portland • St. Louis • San Antonio • Memphis • Kansas City • Bogalusa
 Milwaukee • Chattanooga • Weslaco • New Haven • Appleton • Hickory • Greensboro • Sumter

Processing Equipment

Oil-well Rotary Hose, Coupling, Are High-pressure Tools

Special construction equips hard-drilling twosome for deep-well jobs

USES — Oil-well drilling hose and coupling for heavy-duty service. Especially designed for hard drilling conditions and high pump pressures encountered today in drilling deeper wells to meet the ever-increasing demand for petroleum products.

For all methods of drilling, including oil and oil-base mud.

FEATURES — Hose is resistant to pulsation under pressure; hence, steady in derrick. It handles more easily with less danger of damage, manufacturer reports. Long-lived and highly flexible.

Construction of coupling assures increased safety from costly leaks and blow-outs.

DESCRIPTION — "Ray-Man" rotary hose: new method of construction employs manufacturer-designed machine that winds high tensile steel wire rotary hose strength members under precision tension, giving qualities described above. Constructed with oil-proof synthetic Flexlastics tube, suitable for all methods of drilling.

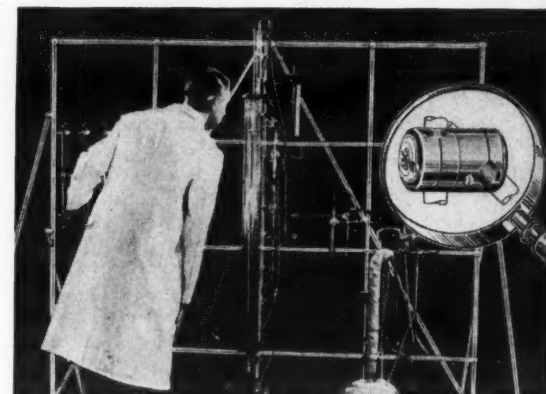
Built-in Type "E" Coupling: designed with new "Lip-Lok" pressure-sealing flange.

SOURCE — A development of Manhattan Rubber Division, Raybestos-Manhattan Inc., Dept. CP, Passaic, N. J. . . . or for more information check CP 4627 on handy form, pages 2 and 3.

★

Apparatus-Support Clamps Fit Any Frame At Any Angle

Permit multiple-rod attachment at any 2 or 3-dimensional angle; also wall, floor use



Apparatus support frame and Universal clamp

USES — Apparatus-support frames and clamps for mounting experimental set-ups and pilot plant apparatus. For quick assembly of rigid laboratory frames for all requirements and of all types. Clamps may also be used with conventional clamps and stands.

FEATURES — Clamps are versatile, functionally adaptable to every type of frame construction, and permit any

CHEMICAL PROCESSING Preview

Processing Equipment

choice of angle between rods. Frames are rigid, yet light-weight and, like clamps, corrosion-resistant. Economical.

DESCRIPTION — "Universal" clamps are so-called because they permit multiple-rod attachment at any 2-dimensional angle. Swivel-attachment gives any 3-dimensional angle, and there is a special attachment for wall and floor mounting and couplings.

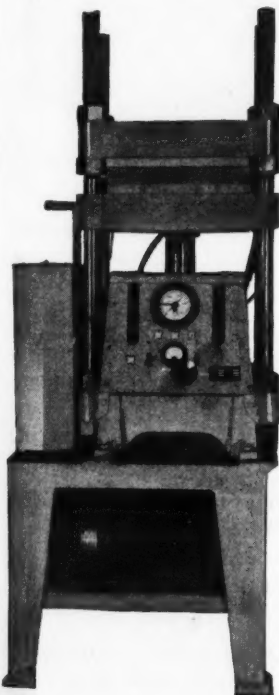
Rod and clamp surfaces are bright machine finish, of high-melting aluminum alloy, machined from cold-rolled stock for maximum strength. Neither unit will disintegrate in a Bunsen burner flame. Bulletin UC-95 contains full details.

SOURCE — Products of The Emil Greiner Company, Dept. CP, 161 Fifth Ave., New York 13, N. Y. . . . or for more information check CP 4628 on handy form, pages 2 and 3.

★

50-Ton Molding, Laminating Press Is Self-Contained

Unit is motor-driven through variable-speed pulleys; has automatic max. pressure control



50-ton hydraulic press

USES — Motor-driven hydraulic press for molding and laminating in plastic, wood or rubber. A production unit. Also for hand operation.

FEATURES — Self-contained. Compact and sturdy.

DESCRIPTION — 50-ton capacity. Platen 12 x 15 or 18 x 24". Occupies floor space 26 x 30". Height, 71". High-speed hydraulic pump, motor-driven through variable-speed pulleys, provides rapid closing of platen. Operates at high speed to close platens; at slow speeds to permit necessary pressure for molding and laminating, and to maintain maximum pressure on work.

Maximum pressure automatically controlled by pressure gauge with hand-set pointer. With

current on, maximum pressure is maintained for as long as desired. Water-cooled platens are available. Electrical heating elements in platens are automatically controlled. Temperature of either platen registered by thermocouple indicator on panel, and a dial light shows when current in heating elements is on. Hydraulic jack with hand-lever for hand operation.

SOURCE — Product of Laboratory Specialties, Inc., Dept. CP, 144 S. Wabash St., Wabash, Ind. . . . or for more information check CP 4629 on handy form, pages 2 and 3.

OIC
PACE-SETTER
IN VALVES

Stainless Steel
V A L V E S

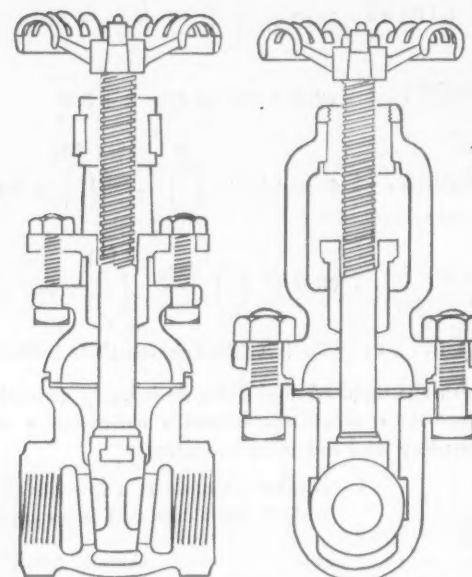
OFFERS A
NEW LINE OF

THE NEW OIC STAINLESS STEEL VALVE IS AN
O. S. & Y., BOLTED BONNET, TAPERED
WEDGE GATE VALVE OF SUPERIOR QUALITY

OIC's new Stainless Steel Valve is designed especially for use in the many industries where corrosion is production's enemy number one. As in other OIC Pace-Setting Valves, OIC uses only the finest materials and most modern design.

Material in contact with fluid is 18-8 SMO* Stainless Steel throughout. Bodies, bonnet-yokes and wedges are cast 18-8 SMO (Type 316) Stainless Steel. Stems are from Type 316 rod stock. Yoke bushings through which the stem rises are renewable. The packing is African Blue asbestos material not graphited, which is the best material that can be used against corrosive fluids. Gaskets sealing the round male-female body bonnet joint give utmost safety protection with highest corrosion resistance.

Screwed end sizes available from 1/2" to 2". Type 304 stainless steel and flanged end available upon request.



*The letter "S" after the numerals designating the chromium and nickel content in OIC Stainless Steel Valves denotes that the carbon content is less than 7/100 of 1%. This is an important factor, as the degree of corrosion-resistance is greatly influenced by the carbon content. Its presence must be limited to the lowest possible percentage. In "S" alloys, this minimum is achieved.

O-548-S

IF YOU WOULD LIKE FURTHER DETAILS ON
THIS NEW STAINLESS STEEL VALVE, JUST
WRITE, GIVING YOUR NAME, FIRM AND
ADDRESS TO THE OHIO INJECTOR COMPANY,
WADSWORTH, OHIO.

OIC VALVES
STEEL • IRON • BRONZE

When inquiring check CP 4630 on handy form, pgs. 2-3

UTILIZATION OF ANSUL

CH₃Cl

These examples illustrate a few specific applications for Ansul Methyl Chloride in research laboratory and industrial practices:

GRIGNARD $\text{CH}_3\text{Cl} + \text{Mg} \rightarrow \text{CH}_3\text{MgCl}$

QUATERNARIES $\text{CH}_3\text{Cl} + \text{RNH}_2 \rightarrow \left[\begin{array}{c} \text{R} \\ \diagup \quad \diagdown \\ \text{N}^+ \\ | \\ (\text{CH}_3)_3 \end{array} \right] \text{Cl}^-$

ALIPHATIC ETHERS . $\text{CH}_3\text{Cl} + \text{NaOR} \rightarrow \text{CH}_3-\text{O}-\text{R} + \text{NaCl}$

AROMATIC ETHERS . $\text{CH}_3\text{Cl} + \text{C}_6\text{H}_5\text{ONa} \rightarrow \text{C}_6\text{H}_5\text{OCH}_3 + \text{NaCl}$

ALIPHATIC HYDROCARBONS . . . $\text{CH}_3\text{Cl} + \text{RNa} \rightarrow \text{CH}_3-\text{R} + \text{NaCl}$

AROMATIC HYDROCARBONS . . . $\text{CH}_3\text{Cl} + \text{Na} + \text{C}_6\text{H}_5\text{Cl} \rightarrow \text{C}_6\text{H}_5\text{CH}_3 + \text{NaCl}$

" " . . . $\text{CH}_3\text{Cl} + \text{C}_6\text{H}_5\text{Cl} \xrightarrow{\text{AlCl}_3} \text{C}_6\text{H}_5\text{CH}_3 + \text{HCl}$

SILICONES $\text{SiCl}_4 + 2\text{CH}_3\text{MgCl} \rightarrow (\text{CH}_3)_2\text{SiCl}_2 + 2\text{MgCl}_2$

In addition Ansul Liquid Methyl Chloride is being currently used as a low temperature solvent • propellant solvent • extractant • refrigerant • and in other laboratory and industrial processes.

Methyl Chloride is a low priced chemical available in tank cars and large and small cylinders.

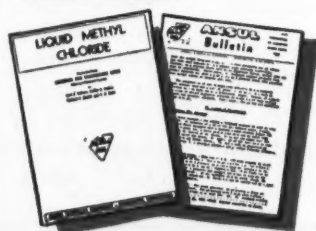


PHYSICAL PROPERTIES

Chemical formula CH_3Cl
Molecular weight 50.491
Color (gas or liquid) Colorless
Odor Ethereal, non-irritating
Melting point $-144^\circ \text{F. } (-97.6^\circ \text{C.})$
Boiling point $-10.65^\circ \text{F. } (-23.7^\circ \text{C.})$
Critical Temperature $289.6^\circ \text{F. } (143.1^\circ \text{C.})$
Critical pressure 969.2 lbs. per sq. in. abs.
Solubility Methyl chloride in water—3 to 4 volumes methyl chloride vapor in 1 volume of water at ordinary temperatures and atmospheric pressure—methyl chloride in alcohol—readily soluble.
Specific gravity of liquid909

*REG. U. S. PAT. OFF.

Consult Ansul's research and technical departments on these and other applications of Methyl Chloride.



Write for treatise on Ansul Liquid Methyl Chloride and request bulletin describing the specific laboratory and industrial application in which you are interested.

For your SULFUR DIOXIDE applications . . . Use **ANSUL SULFUR DIOXIDE**

ANSUL CHEMICAL COMPANY
INDUSTRIAL CHEMICALS DIVISION, MARINETTE, WIS.
60 E. 42nd St., New York—535 Chestnut St., Philadelphia

When inquiring check CP 4631 on handy form, pgs. 2-3

Processing Equipment

Foot Speed Control Frees Both Hands to Operate Electric Eraser

Has pencil point precision; protective sleeve safeguards fingers

USES — For sharp, keen, erasing with high speed. Especially designed for drafting rooms and similar service.

FEATURES — Weighs only 12 ounces. Patented sleeve protects fingers. Quick change eraser chuck accepts any of the standard erasers.

DESCRIPTION — Balanced to fit the shape of the hand, it handles erasures with pencil point precision. The same motor is employed as in maker's powered tools. All moving parts except the rubber eraser are completely covered with sleeve.

Optional equipment includes an easy to operate foot speed control permitting absolute freedom of both hands.

SOURCE — Chicago Wheel & Mfg. Co., Dept. CP, 1101 West Monroe St., Chicago, Ill. . . . or for more information check CP 4632 on the handy form, pages 2 and 3.

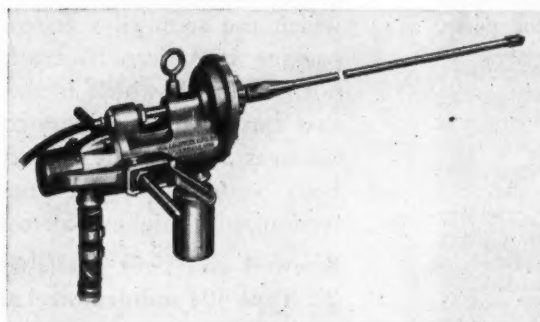
*

Geared Cleaner Scours Scale-Caked Tubes 3/8 to 1-3/4" ID

35-lb. motor develops 1200 rpm to scotch scale in condensers, heat exchangers

USES — Geared cleaner for removing any type scale in 3/8 to 1 3/4" ID condenser and heat exchanger tubes, including those completely closed with scale.

Manufacturer recommends for chemical, industrial and refinery use for thorough cleaning of all types of



Geared tube cleaner

straight heat exchanger and condenser tubes of any scale condition. For use with a variety of drills and cutting edges.

FEATURES — Extremely light-weight, yet powerful enough to cut through the heaviest scale. Cool-drilling. Convenient handle-valve assures constant, positive control.

DESCRIPTION — Motor alone weighs only 35 lbs., is air or steam-driven at 1200 rpm maximum. All moving parts are alloy steel, heat-treated for uniform grain and hardness. Sturdy, light-weight aluminum alloy outer

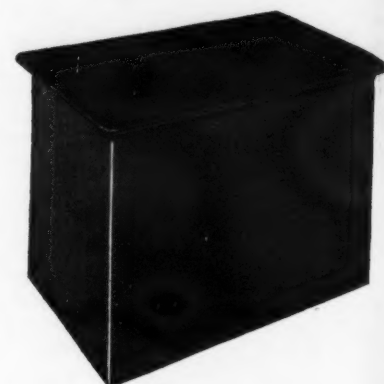
TANK LININGS

TYGON

RESILON

RUBBER

BRICK OR TILE



On your next lined-tank installation, let "U. S." engineers suggest the lining material.

As a fabricator of corrosion-resistant equipment from plastics, rubber, ceramics and metals, we can recommend without prejudice the most effective material for your specific application, and at the lowest cost.

Have you tried Tygon Plastic Paint to protect plant equipment against corrosive fumes? Try it. You'll save time, money and worry.

Write for the "U. S." chemical stone-ware catalog showing hundreds of standard and special items, such as, tanks, pots, crocks, valves, pipe, fittings, tourills, acid eggs, kjebdal equipment, pumps, coils, etc.

**PROCESS
EQUIPMENT
DIVISION**



U. S. STONEWARE

Akron 9, Ohio

When inquiring check CP 4633 on handy form, pgs. 2-3

Processing Equipment

case. Flushing agent, introduced through motor and drive-shaft to cutting edges, flushes out removed deposits. Packing glands prevent leakage of flushing agent.

SOURCE — Produced by The Airetool Manufacturing Company, Dept. CP, 338 S. Center St., Springfield, O., . . . or for more information, check CP 4634 on handy form, pages 2 and 3.

14-lb. Air Drill Speeds Overhead and Underfoot Maintenance

Easily handled on ladder or scaffold; takes chisels, gouges, drills, moil points

USES — Lightweight jackhammer for general utility work and plant maintenance. A tool of many uses, viz:

Drilling anchor bolt holes for cranes, fire escapes, sprinkler systems; chipping and scaling; roughing broken concrete for patching; tearing out damaged brick and masonry; drilling through masonry for pipelines; cutting through floors for drains; drilling anchor holes for overhead line shafts, etc. Handles drills, chisels, gouges, moil points, etc.

FEATURES — Well suited for overhead work. Ease of handling facilitates use on ladders or scaffolds. Throttled control permits selection of the right blow for any type of work or tool. Versatile, with wide utility.



Installing sprinkler system

DESCRIPTION — Strong automatic rotation. Air-operated, using standard jackbits. Use of adapters permits using stardrills for making holes 1-1/8" and less. By removing rotation pawls or using round shanked tools, it can be used as a light paving breaker or for chiseling.

SOURCE — Made by Ingersoll-Rand Company, Dept. CP, 11 Broadway, New York 4, N. Y. . . . or for more information check CP 4635 on handy form, pages 2 and 3.

MARCH, 1948



edge moor achievement in process equipment fabrication



THIS high pressure autoclave, 900 pounds internal working pressure, 320 pounds jacket working pressure, is another Edge Moor achievement in process equipment fabrication . . . a direct result of Edge Moor experience, facilities and proficiency.

Edge Moor is equipped to furnish any type of heavy-wall welded fabrication to your individual designs, specifications or requirements. Materials include:

CARBON STEELS	MONEL	NICKEL
STAINLESS STEELS	HERCULOY	INCONEL
CLAD STEELS	HIGH CHROME	NICHROME
NICKEL STEELS	18-8 ALLOYS	EVERDUR

Edge Moor Shops have complete facilities for stress-relieving, annealing and X-ray . . . and are approved by leading insurance companies for fusion welding to meet all codes and tests. We shall be pleased to place our experience and facilities at your disposal when you are considering additional plant equipment. Write for literature today.

EDGE MOOR IRON WORKS, INC.

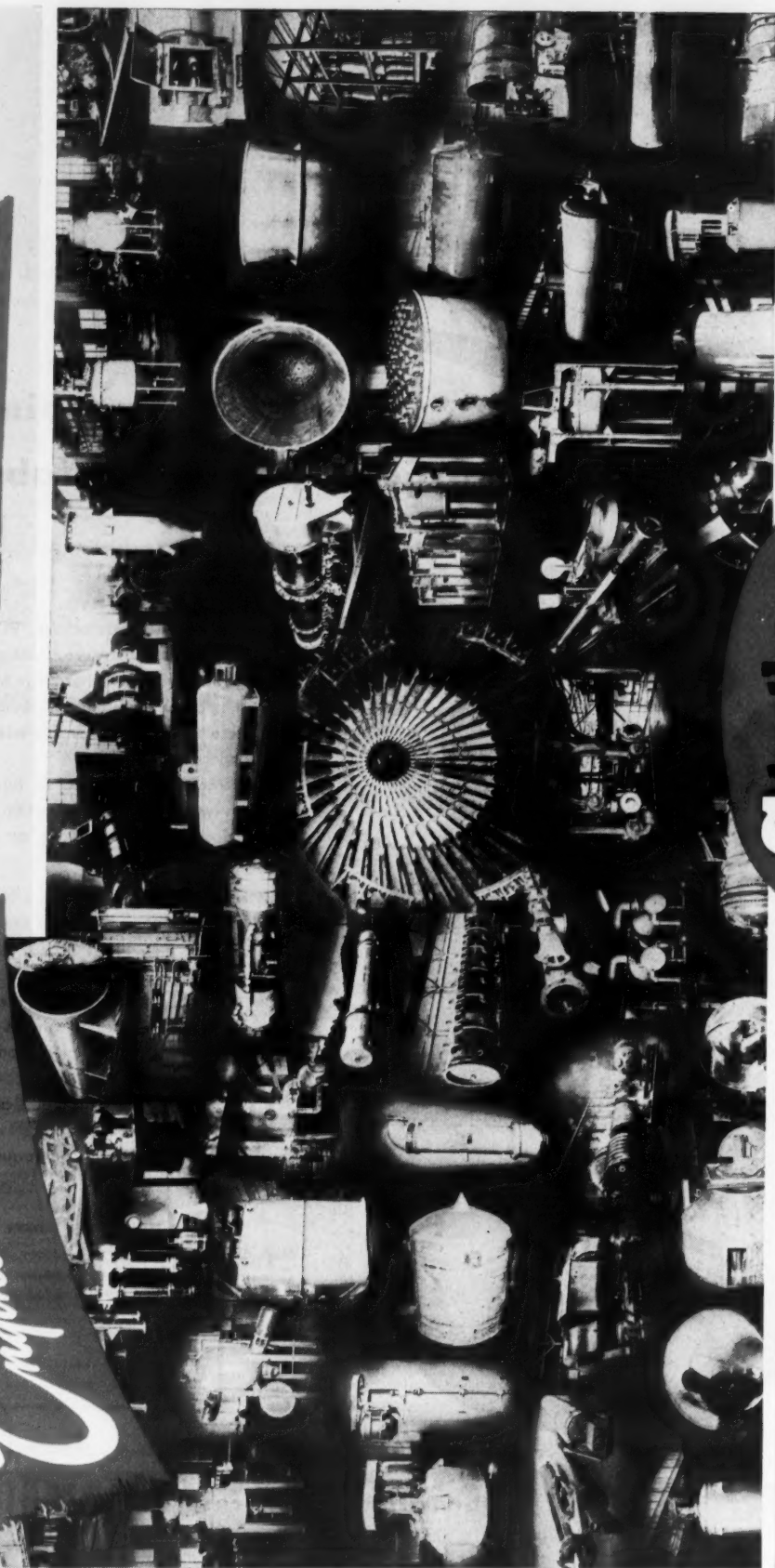
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edge moor fabricators of process equipment



When inquiring check CP 4636 on handy form, pgs. 2-3

Engineered Precision ...to meet the demand for Lower Costs
—and Higher Production



STRUTHERS WELLS ENGINEERS are available any-time, anywhere to aid in the design and development of standard and specific requirements for the processing industry—using the newest techniques and materials.

**Struthers
Wells**

3 GREAT PLANTS
WARREN, PENNA. and TITUSVILLE, PENNA.
OFFICES IN PRINCIPAL CITIES

When inquiring check CP 4637 on handy form, pgs. 2-3

Processing Equipment

Enclosed Motor Has Improved Air-to-Air Heat Exchanger

Compact, easy to clean; available with stainless tubes, fans, etc.

USES — For applications where totally-enclosed, fan-cooled, wound-rotor motors are indicated and where reduced size and easier cleaning are of particular advantage. These motors are suitable for a wide range of service in numerous industries.

FEATURES — To assure trouble-free operation under extremely unfavorable atmospheric conditions, the motors can be built with stainless steel ventilating tubes, fans and end plates and cast iron terminal boxes and collector enclosures. Reduction in size possible through greater efficiency.

DESCRIPTION — Built with improved tube-type air-to-air heat exchanger, first used for squirrel cage motors.

Built with these special features, the 500 hp, 805 rpm 2300 v. motor shown is to be used for driving a centrifugal pump in a midwestern chemical plant. Its collector assembly is cooled by radiation, with internal air circulation provided by fan blades mounted on the collector assembly.

SOURCE — The Allis Chalmers Mfg. Company, Dept. CP, Milwaukee, Wis. . . . or for more information check CP 4638 on the handy form, pages 2 and 3.

★

Stainless 18-8 Mo Pumps Are Self-priming, 100 to 1750 rpm

Deliver 55 and 38 gpm at 0 and 25 psi heads, respectively, at 1750 rpm

USES — Stainless steel pumps for chemical and rubber applications. For operation in either direction and mounting in any position.

Of particular interest for portable units and intermittent transfer of active chemical solutions.

FEATURES — Self-priming. For portable units and intermittent transfer of active chemical solutions, this means elimination of any need to locate pumps in sums where they will be immersed in the liquid to be pumped, or need to provide auxiliary facilities for manual priming. Has only one moving part.

DESCRIPTION — 18-8 Mo., Type 317. Only moving part is tough, flexible impeller. This is made of a neoprene compound selected for chemical inertness and wear-resistance. Impeller's natural resilience is reported to compensate automatically for wear in pump body, facilitating passage of suspended solids without jamming.

Primes automatically; operating suction, more than 27" of mercury. Pumped liquid automatically lubricates between pump body and impeller. Positive-action mechanical seal. Bearings are factory-lubricated, sealed, protected by drain holes and slinger ring. Operating speeds range from 100 to 1750 rpm, offering maximum flexibility in driving arrangements.

Presently available in 1½" pipe connections only, although larger and smaller sizes are scheduled. Delivers 55 gpm at 0 psi head and 38 at 25 psi head, at 1750 rpm. Suitable for sustained operation up to 25 psi.

CHEMICAL PROCESSING Preview

MORE REFRIGERATION WITH YOUR PRESENT COMPRESSOR

NIAGARA AERO-PASS CONDENSER

Saves 15% to 35% of Power

Reducing head pressure from 195 lbs. to 165 lbs. adds extra capacity to your refrigeration system.

Users of the NIAGARA AERO-PASS Condenser gain this advantage, saving 15% to 35% of power, and 95% of water consumption.

NIAGARA patented "Balanced Wet-Bulb Control" provides constant year 'round operation at the minimum head pressure, without attention. Users say it saves half the trouble of operating a refrigeration system.

These savings are permanent, because the NIAGARA patented "DUO-PASS" pre-cooling coil prevents clogging of condenser tubes with scale.

Patented NIAGARA "Oilout" removes oil and sludge from the refrigerant at the most effective point, keeping the system clean and at peak operating efficiency.

Write for Bulletin 103 -CP

NIAGARA BLOWER COMPANY

Over 30 Years' Service in Air Engineering

405 Lexington Ave., New York 17, N. Y.

Field Engineering Offices in Principal Cities

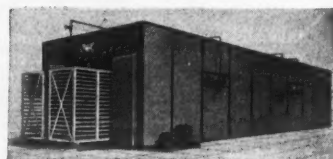
When inquiring check CP 4639 on handy form, pgs. 2-3

"NATIONAL" DRYERS FOR THE CHEMICAL INDUSTRY Uniform Drying at Higher Speeds



Above — Single Conveyor Dryer for handling large quantities of chemicals, abrasives, etc. Continuous hopper feed; automatic leveler; pressure extraction.

Above — New Truck Type Tray Dryer for chemicals and pharmaceuticals. Write for details of improved features.



Right — Semi-Continuous Tunnel Type Truck Dryer. For quantity production of filter pressed chemicals and minerals.

TEST DRYERS
FOR EVERY
PURPOSE



SPECIAL DRYING
AND HEATING
EQUIPMENT

THE NATIONAL DRYING MACHINERY CO.

2709 N. HANCOCK STREET, PHILADELPHIA 33, PA.

When inquiring check CP 4640 on handy form, pgs. 2-3

Processing Equipment

For intermittent and irregular operation, slightly higher pressures are permissible. Model 340.

SOURCE — Made by Jabsco Pump Company, Dept. CP, 2031 N. Lincoln St., Burbank, Calif. . . . or for more information check CP 4641 on handy form, pages 2 and 3.

Fills Containers Up to 10 lbs. At 12 to 104 per Minute

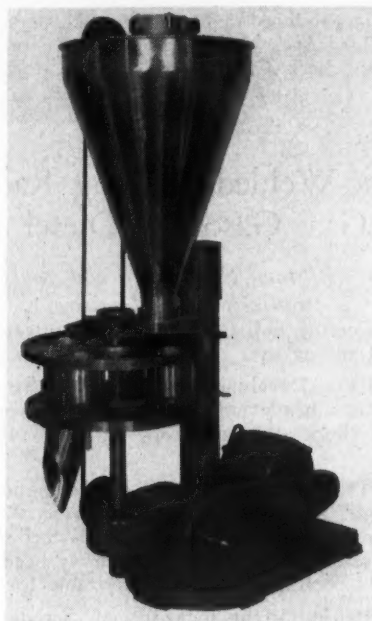
100-125 lb. units are accurate within 1/32 to 1/16 oz.; handle many products

USES — Mechanical package fillers for filling all types and sizes of containers.

FEATURES — Portability permits use throughout plant. Requires no skilled operator. Combines precision with high filling speeds. Interchangeable parts.

DESCRIPTION — Models are available for the small containers up to 5 lbs., while the Model B-4 fills containers up to 10 lbs., has 5" diameter cups, minimum and maximum volumes of 8 and 300 cubic inches, respectively. A multiple discharge method assures 100% increase in capacity of all models. Increased maximum capacity is possible with special machines.

Various models fill from 12 to 104 containers per min., and weigh from 100 to 125 lbs., with overall dimensions 13" wide, 28" deep, 38" high. Accurate within 1/32 to 1/16 oz., and equipped with accurate weight adjustment. One operating lever starts and stops runs.

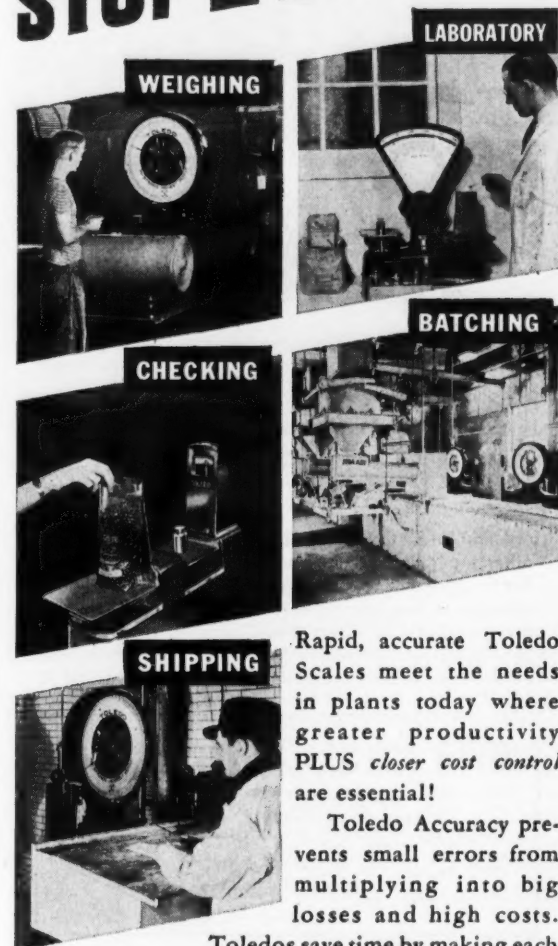


Package filler

Driving mechanism is totally enclosed, and all working parts operate in oil bath. Provision is made for perfect alignment of cups with discharge openings, and without adjustment.

SOURCE — Product of Frazier & Son, Dept. CP, 338 Cortland St., Belleville, N. J. . . . or for more information check CP 4642 on handy form, pages 2 and 3.

Control Costs! STOP ± ERRORS



Rapid, accurate Toledo Scales meet the needs in plants today where greater productivity PLUS closer cost control are essential!

Toledo Accuracy prevents small errors from multiplying into big losses and high costs.

Toledos save time by making each weighing operation quick and sure. Let Toledo help you with your control jobs in weighing, checking, testing, counting, batching, force-measuring. Toledo Scale Company, Toledo 12, Ohio.

New illustrated bulletin No. 2020 shows Better Ways to control costs.

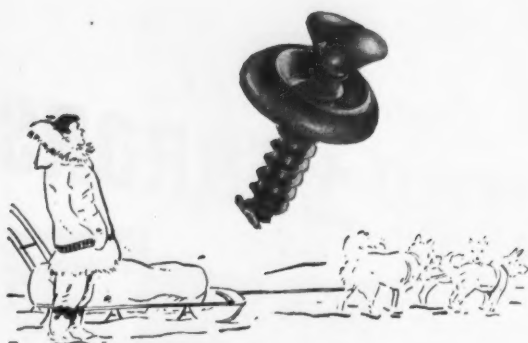
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TOLEDO

HEADQUARTERS FOR SCALES

When inquiring check CP 4643 on handy form, pgs. 2-3



FROM ALASKA

FROM THE SUB-ZERO OF DEEP-FREEZE UNITS TO THE SEARING HEAT OF A BLAST FURNACE YOU'LL FIND

**Anti-Corrosive
STAINLESS STEEL
fastenings**

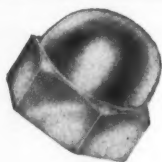
resisting the corrosion of varying temperatures, and all other types of corrosion, as well! In tropic climes, in Arctic cold—in acids and alkalis—in every place where corrosion in any form threatens a product or a production setup—that's where Anti-Corrosive fastenings of Stainless Steel, tailored to fit the exact conditions, are on the job, LASTING LONGER — SAVING MONEY!

OVER 100 Items NOW In Stock
7000 Sizes Ready to Ship

Nuts, bolts, machine screws, wood screws, cotter pins, nails, rivets, and every other Stainless Steel fastening you need. SPECIAL SIZES, SPECIAL ANALYSES, MANUFACTURED PROMPTLY ON ORDER.

Write for catalog and stocklist. Address Anti-Corrosive Metal Products Co., Inc., 52 River Road, Castleton-on-Hudson, N. Y. In Canada, Railway and Power Engineering Corp., Ltd.

TO



Zanzibar

Anti-Corrosive Metal Products Co. Inc.
CASTLETON-ON-HUDSON NEW YORK

When inquiring check CP 4644 on handy form, pgs. 2-3

Processing Equipment

Palm-size Hose Valve Lowers Water-use Up to 50%, Report

Corrosion-resistant, rubber-covered Monel unit delivers up to 13 gpm at 75 psi

USES — Palm-size hose valve for use in chemical plants, breweries, paper mills, pharmaceutical product manufacture, etc. Models include one for use with long extension nozzles.

FEATURES — Resistant to corrosion and wear. Consumption of wash-water is reduced as much as one-half, in some cases, by their positive sealing action, automatic operation and absence of leakage, manufacturer reports. Compact and easily operated.

DESCRIPTION — Only two moving parts: the operating plunger and control ball. Pushing button with thumb causes plunger to roll ball off seat, giving instant full flow. Less than 10 lbs. finger-pressure opens valve at 50 psi hose pressure, while 4 lbs. finger-pressure holds it open to discharge up to 13 gpm through nozzle at 75 psi line pressure.

Difference in pressure between center and outside of stream forces ball into valve throat when button is released, closing valve. Ball is held firmly against seat by line pressure, making line-contact seal. Valve is available for standard hose sizes from 1/4 to 1". Made completely of Monel, including ball and plunger, with body rubber-coated to prevent scratching interior surfaces of tanks or equipment being cleaned.

A threaded replaceable nozzle adapts one model of this valve to use with long extension nozzles.

SOURCE — Produced by Paul Valve Corporation, Dept. CP, 683 Third Ave., New York, N. Y. . . . or for more information check CP 4645 on handy form, pages 2 and 3.

★

Electric-Welded Cooling Radiator Has Gas, Gasoline, Diesel Uses

Built to withstand Navy gun-recoil, units range from 2 1/2 to 10 1/2' square

USES — Cooling radiators for heavy-duty gasoline, gas and diesel engine use.

FEATURES — Developed as a result of wartime Navy demand for a heavy radiator tank which would withstand the shock of gun recoil. Strong, rugged and efficient.

DESCRIPTION — Innovations, as exemplified by one of the larger units approximately 7' wide, 9' high, include fabricated steel headers, formed steel side members and seamless tubes brazed to heavy header plates. Each of 24 cooling sections is removable for repair.

Functionally important is a special, aerodynamically-designed fan with variable pitch. It is adjustable for temperature and climatic changes. A pusher or puller fan may be used, sucking air in or blowing it out of the core, as required by type of installation.

Mono-Weld radiators cover a range of sizes from about 2 1/2 up to about 10 1/2 square. Made by latest electric welding methods, they have heavy steel formed and welded shutters for improved cooling-control. Entire unit is mounted on steel feet, welded to the side mem-

Save money 4 ways with Farval Centralized Lubrication

FOR more than 20 years, Farval has been saving money for users. Through efficient, dependable lubrication of machines and industrial equipment of all kinds, Farval saves 4 ways: It saves oiling labor, it saves lubricant, it reduces bearing expense, it eliminates down time.

The Farval System is a positive mechanical method of delivering oil or grease under pressure to a group of bearings from one Central Station, in exact quantities, as often as desired. It consists of a central pumping unit, two main supply lines and a measuring valve for each bearing.

Write for Free Catalog No. 25 and Case Studies. **THE FARVAL CORPORATION**, 3257 East 80th Street, Cleveland 4, Ohio.

Affiliate of The Cleveland Worm & Gear Co., Industrial Worm Gearing. In Canada: Peacock Brothers Limited.



Write for this
FREE bulletin



When inquiring check CP 4646 on handy form, pgs. 2-3

CHEMICAL PROCESS PLANTS Designed, Engineered, Constructed, Equipped To Turn Out Your Product Profitably!

If you need facilities quickly, that will operate with utmost economy and efficiency, consult this seasoned staff of chemists—engineers—builders, experienced in every commercially significant process and method. Abreast of latest trends; one responsibility from plan board to the last valve.

Investigate the benefits of handling your next plant project or equipment purchase through this established firm.



CHEMICAL DIVISION • FIDELITY BLDG. • KANSAS CITY, MO.

J.F. Pritchard & Co.

ENGINEERS • CONSTRUCTORS • MANUFACTURERS
for the CHEMICAL, PETROLEUM, GAS & POWER industries

Offices in Key Cities Coast to Coast

Consult Sweets Files, Chemical Engineering Catalog, Refinery Catalog, ASH & VE Guide for full information.

When inquiring check CP 4647 on handy form, pgs. 2-3

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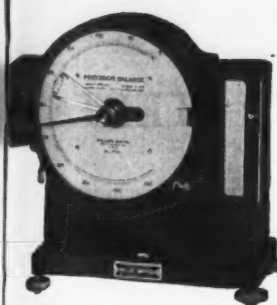
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view MARCH, 1948



Make your
tedious weighing
simple and
routine with the
Roller-Smith
Precision Balance

SAVE TIME
SAVE MONEY

In Assaying - Research - Production Control - Analytical Work.
The **Roller-Smith Precision Balance** is universally used for weighing within the range of 3 mg to 150 grams. Everyday applications include the measurement of liquid surface tension, yarn numbering, counting extremely small parts by weight, assaying precious ores, weighing diamonds and specific gravity determinations in the manufacture of chemicals, biologicals, textiles, lamps, radio tubes, watches, explosives and countless other products and processes.

The **Roller-Smith Precision Balance** is the result of careful research and painstaking design to produce a better means for rapid weighing, quality control and uniformity in the manufacture of your products.

Write for complete details.

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BETHLEHEM, PENNSYLVANIA

STAINLESS CLAD WELDING

If you are welding
Stainless Clad materials
use Arcos electrodes
for dependable welds.

"PEACE OF
MIND"
PACKED
IN EVERY
BOX.

Specific and clearly illustrated
information on "Procedures
for Welding Stainless Clad
Refining Equipment" is avail-
able on request.



Electrodes for Arc Welding
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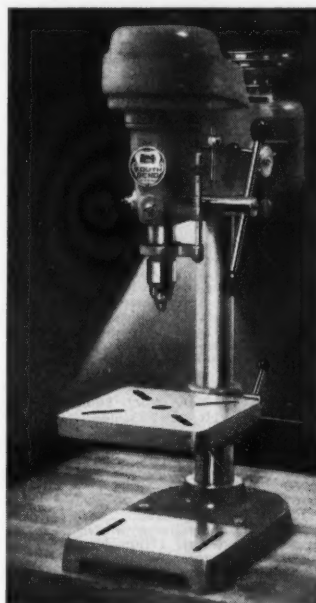
ARCOS
CORPORATION
1515 LOCUST STREET
PHILADELPHIA 2, PA.

Processing Equipment

bers. Latter are fitted with steps to permit operator reaching top of radiator for inspection and filling.
SOURCE — Developed by Young Radiator Company, Dept. CP, Racine, Wis. . . . or for more information check CP 4650 on handy form, pages 2 and 3.

14" Bench & Floor Model Drill Presses Have Built-in Light

*Quick acting belt tension release lever
simplifies speed changes*



Bench Model Press

four inches, with spindle speeds of 707, 1305, 2345 and 4322 rpm. The free-floating spindle design prevents mis-alignment, side-thrust and whip. The depth gauge is graduated in sixteenths of an inch, and has adjustable collars to control the depth of feed and the length of the return stroke. Two precision ball bearings carry the drive unit load and two additional ball bearings carry the spindle, which is spline driven. All ball bearings, being pre-lubricated and sealed, require no oiling. The spindle quill bearing has adjustment to compensate for quill wear.

A full tilt type table, with 10" x 10" precision ground top surface, has slots for clamping fixtures or work. An improved type of double plug binder is provided for locking the table quickly and securely in any position on the 23/4" diameter column.

The bench model drill press has 10 7/8" maximum chuck to table distance, 10 7/8" table travel, 17" maximum chuck to base distance, 10 3/4" x 17 3/4" slotted base with precision ground top surface, 35 1/2" overall height. Floor model has 40 1/8" maximum chuck to table distance, 40 1/8" table travel, 46 1/2" maximum chuck to base distance, 15" x 21" slotted base, 65 1/2" overall height. Domestic shipping weight 235 pounds.

SOURCE — South Bend Lathe Works, Dept. CP, South Bend, Indiana . . . or check CP 4651 on the handy form, pages 2 and 3.

USES — Both models of this new press have capacity to drill 1/2 inch in iron or steel at the center of a 14 inch circle.

FEATURES — Built-in light with independent switch provides shielded illumination for work area, eliminating the necessity of installing a separate lighting fixture. A quick acting belt tension release lever simplifies changing the spindle speeds and returns the vertical mounted motor to its original position after change, thus maintaining the same belt tension for each if the four cone pulley steps.

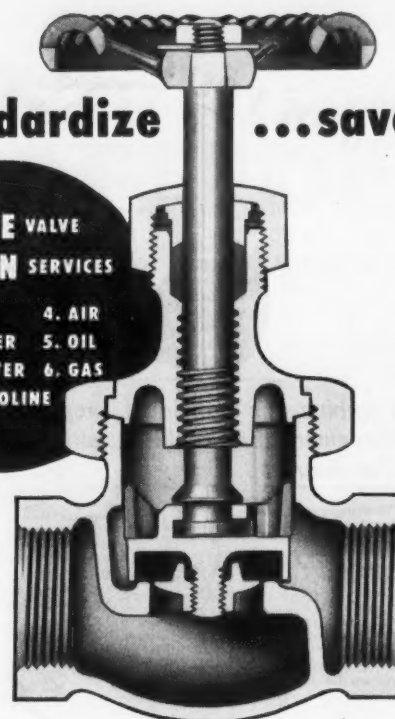
DESCRIPTION — The spindle has a maximum travel of

standardize ... save

**THE ONE VALVE
FOR SEVEN SERVICES**

- | | |
|---------------|--------|
| 1. STEAM | 4. AIR |
| 2. HOT WATER | 5. OIL |
| 3. COLD WATER | 6. GAS |
| 7. GASOLINE | |

Cross-section of
globe pattern;
Screwed or
Flanged ends.
Rated at 150 lb.
Steam; up to 300 lb.
cold pressures.



Crane no. 7 brass globe valve with composition disc

Don't change valves . . . just change the disc in the valve! Use Crane No. 7, 150-pound valves with the finest composition discs for all of the above services. They can be quickly changed over from one service to another. They can be repaired in the line in a matter of minutes. Simply open the bonnet joint and slip on a disc-holder with the desired disc . . . a supply of disc-holders and discs takes the place of as many valves.

Save time and money in purchasing, maintenance . . . and keep your valve stocks at a new low, yet adequate, level. See page 30 of your Crane Catalog or ask your Crane representative about the No. 7.



No. 7 Angle Valve,
with screwed ends.
(Specify No. 9
for flanged ends.)

Ask for Circular AD-1682
describing these valves

CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

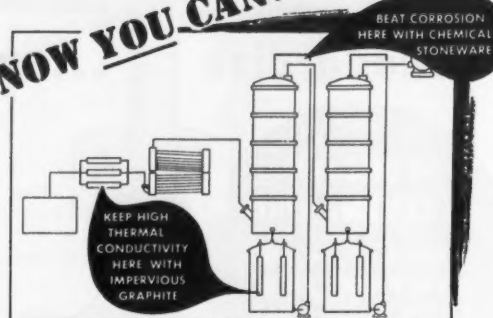
EVERYTHING FROM . . .

CRANE

FOR EVERY PIPING SYSTEM

VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

When inquiring check CP 4652 on handy form, pgs. 2-3



Combine the individual properties of Chemical Stoneware and Graphite...with all equipment from One Source!

"Shopping around" for the right combination of process plant equipment is now a has-been. To meet the tightest demands for corrosion resistance, shock resistance, and thermal conductivity . . . General Ceramics is now prepared to supply equipment fabricated in *whole or in combination* from both Chemical Stoneware and Falls Impervious Granhite.

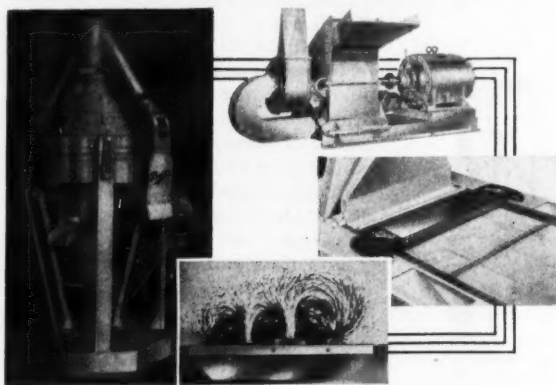
This means: the extreme corrosion proof properties of chemical stoneware to all acids except hydrofluoric

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MACHINERY, EQUIPMENT *and* MATERIALS

Use this "quick-locator" when you want information on a specific type of machine, equipment or material. Everything discussed in this issue is given here, with page references. After checking the information here, if you want more data you can write manufacturer direct . . . or turn to pgs. 2-3 and use the handy "Information Request Slip." This is a special service provided by the publisher . . . no obligation or charge, of course. The Publishers contact the proper manufacturers for you . . . information comes to you direct.

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Seeds stored in bulk take in oxygen, heating up and becoming rancid in the process. This can be stopped by treating the seeds with a chemical related to the growth-control substances of which are diethyl oxalate and ethyl

What's Interesting"

Way to Extend Uses of Peanut Oil

Research projects approved under the Research of 1946 is a study to improve the quality of

project will be aimed at new uses for peanut oils and mayonnaise, for example. A process for these has been developed by Southern New Orleans, La. However, large scale considered necessary to find out what kind of process methods are necessary to yield successful commercial scale.

March Malt Allocations as Announced by USDA

Allocations totaling 1,800,000 bushels for the year were announced by the U. S. Department. These allocations include 1,252,000 bushels for foreign countries and the Philippines, 240,000 bushels for other countries, 133,000 bushels for other countries as a contingency reserve.

No specific export control on October 24, 1946, has been on general license since March 15, 1946, period of general license the actual exports of 100 bushels a month, as contrasted with the month which have been set up for the first

of All Fasteners Used in Repair, Maintenance

80% of all fasteners manufactured go into repair work in many fields of industry. The record during the last thirty years was of increasing the war when variance from common has been fatal. The industry as a whole some 25,000 separate items of interest to small compared to the 200,000 that are available.

Even one of the welcome wartime developments in the field. Delicate materials that shatter under a pneumatic hammer or riveting gun are riveted. Blind riveting is used effectively in the construction of stainless steel refrigeration units and insulation retainer sheets in inaccessible locations—Vol. 4—Number 3. (American Iron and Rivet Manufacturers, Hanna Bldg.,

atoes by Floating Them in Methyl Alcohol Solution

development of seed potatoes is improving says Dr. E. J. Wheeler of Michigan State University. At a recent meeting of the Potato Association he explained that a potato which floats in a methyl alcohol solution is better than one that sinks, because of its specific gravity and therefore is more

g Cottonseed in Storage

ing the spoilage of stored cottonseed, flaxseed has been developed by the U. S. Department of Agriculture.

ake in oxygen and give off carbon dioxide, making rancid in the process. The process can be improved by treating the seeds with a number of compounds including the growth-control hormones, most effective are calcium chloride and ethylene chlorhydrin.

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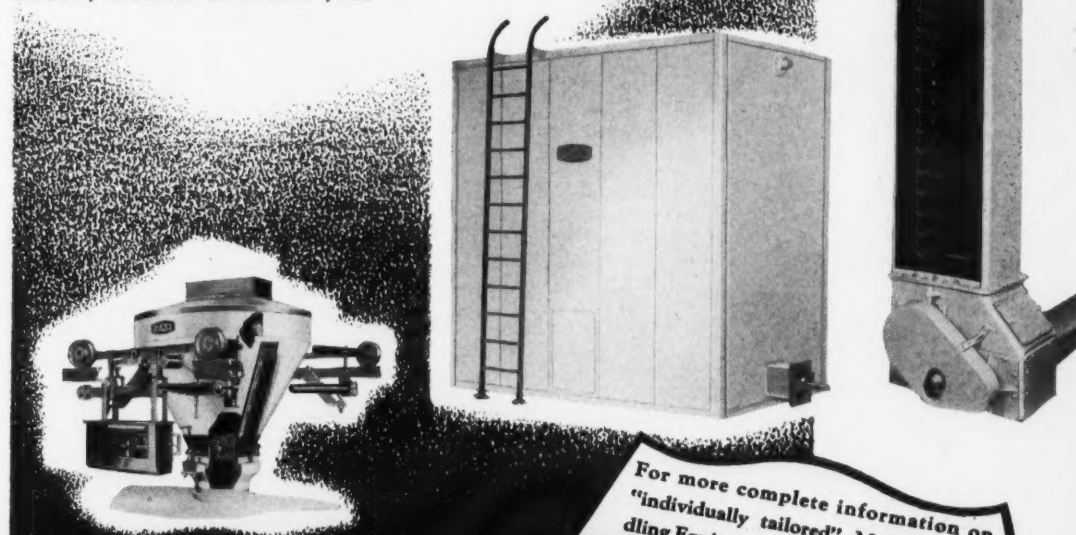
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